

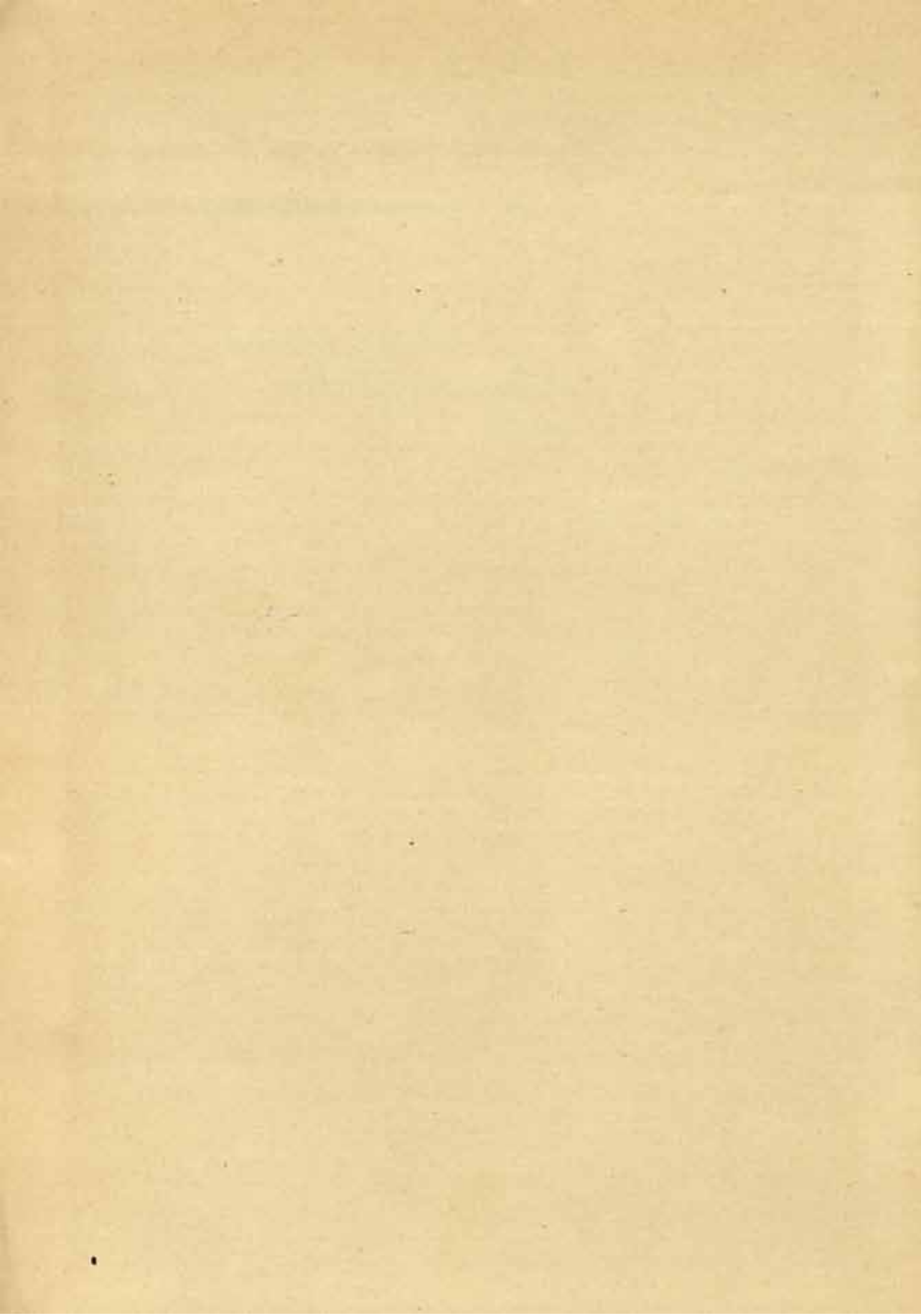
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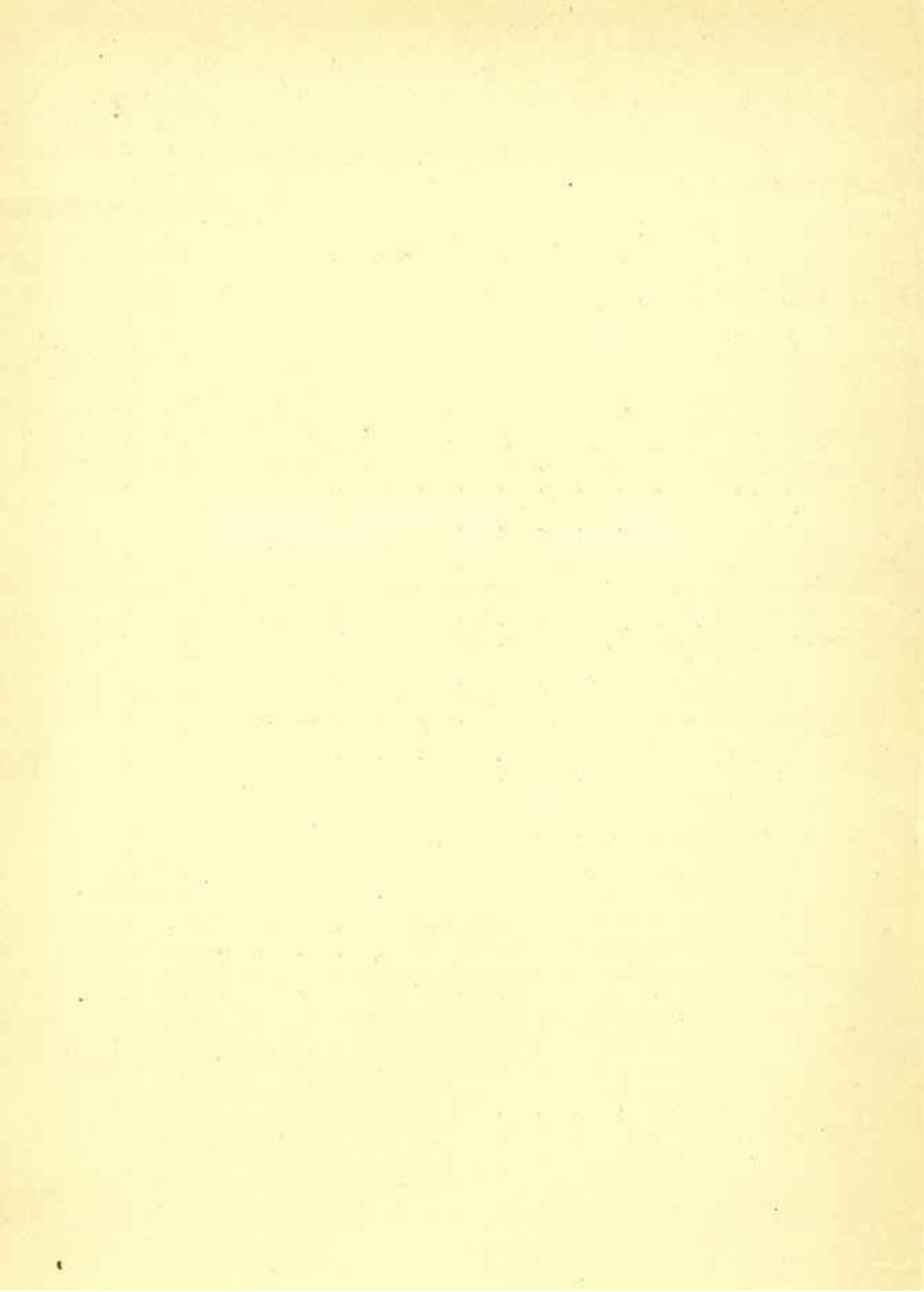
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L A W S
OF THE
SOCIETY OF ANTIQUARIES OF SCOTLAND.

INSTITUTED NOVEMBER 1780 AND INCORPORATED BY
ROYAL CHARTER 6TH MAY 1783.

(Revised and adopted November 30, 1901.)

1. The purpose of the Society shall be the promotion of ARCHÆOLOGY, especially as connected with the investigation of the ANTIQUITIES AND HISTORY OF SCOTLAND.

2. The Society shall consist of Fellows, Honorary Fellows, Corresponding Members, and Lady Associates.

3. Candidates for admission as Fellows must sign the Form of Application prescribed by the Council, and must be proposed by a Fellow and seconded by two members of the Council. Admission shall be by ballot.

4. The Secretaries shall cause the names of the Candidates and of their Proposers to be inserted in the billet calling the Meeting at which they are to be balloted for. The Ballot may be taken for all the Candidates named in the billet at once; but if three or more black balls appear, the Chairman of the Meeting shall cause the Candidates to be balloted for singly. Any Candidate receiving less than two-thirds of the votes given shall not be admitted.

5. Honorary Fellows shall consist of persons eminent in Archæology, who must be recommended by the Council, and balloted for in the same way as Fellows; and they shall not be liable for any fees of admission or annual subscriptions. The number of Honorary Fellows shall not exceed twenty-five.

6. Corresponding Members must be recommended by the Council and balloted for in the same way as Fellows, and they shall not be liable for any fees of admission or annual subscriptions.

7. Ladies who have done valuable work in the field of Archæology may be admitted as Lady Associates. The number of Lady Associates shall not exceed twenty-five. They shall be proposed by the Council and

balloted for in the same way as Fellows, and shall not be liable for any fees of admission or annual subscriptions.

8. Before the name of any person is added to the List of Fellows, such person shall pay to the funds of the Society Two Guineas as an entrance fee and One Guinea for the current year's subscription, or may compound for the entrance fee and all annual subscriptions by the payment of Twenty Guineas at the time of admission. Fellows may compound for future annual subscriptions by a single payment of Fifteen Guineas after having paid five annual subscriptions; or of Ten Guineas after having paid ten annual subscriptions.

9. The subscription of One Guinea shall become due on the 30th November in each year for the year then commencing; and if any Fellow who has not compounded shall fail to pay the subscription for three successive years, due application having been made for payment, the Treasurer shall report the same to the Council, by whose authority the name of the defaulter may be erased from the list of Fellows.

10. Every Fellow not being in arrears of the annual subscription shall be entitled to receive the printed Proceedings of the Society from the date of election.

11. None but Fellows shall vote or hold any office in the Society.

12. Subject to the Laws and to the control of the Society in General Meetings, the affairs of the Society shall be managed by a Council elected and appointed as hereinafter set forth. Five Members of the Council shall be a quorum.

13. The Office-Bearers of the Society shall consist of a President, three Vice-Presidents, two Secretaries for general purposes, two Secretaries for Foreign Correspondence, a Treasurer, two Curators of the Museum, a Curator of Coins, and a Librarian. The President shall be elected for a period of five years, and the Vice-Presidents for a period of three years. One of the Vice-Presidents shall retire annually by rotation and shall not again be eligible for the same office until after the lapse of one year. All the other Office-Bearers shall be elected for one year and shall be eligible for re-election.

14. In accordance with the agreement subsisting between the Society and the Government, the Board of Manufactures (now the Board of Trustees) shall be represented on the Council by two of its Members (being Fellows of the Society) elected annually by the Society. The Treasury shall be represented on the Council by the King's and Lord Treasurer's Remembrancer (being a Fellow of the Society).

15. The Council shall consist of the Office-Bearers, the three representative Members above specified, and nine Fellows, elected by the Society.

16. Three of the nine elected Members of Council shall retire annually by rotation, and shall not again be eligible till after the lapse of one year. Vacancies among the elected Members of Council and Office-Bearers occurring by completion of term of office, by retirement on rotation, by resignation, by death or otherwise, shall be filled by election at the Annual General Meeting. The election shall be by Ballot, upon a list issued by the Council for that purpose to the Fellows at least fourteen days before the Meeting.

17. The Council may appoint committees or individuals to take charge of particular departments of the Society's business.

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20. The Ordinary Meetings of the Society shall be held on the second Monday of each month, from December to May inclusive.

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Form of Special Bequest.

I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, my collection of and I direct that the same shall be delivered to the said Society on the receipt of the Secretary or Treasurer thereof.

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I, A. B., do hereby leave and bequeath to the Society of Antiquaries of Scotland incorporated by Royal Charter, the sum of £ sterling [*to be used for the general purposes of the Society*] [*or, to be used for the special purpose or object of*], and I direct that the said sum may be paid to the said Society on the receipt of the Treasurer for the time being.

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NOVEMBER 30, 1941.

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| 1940. ANDERSON, DAVID, Record Office, H.M. General Register House, Edinburgh, 1. | |

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- 1913.*GRAHAM, ANGUS, M.A., F.S.A., Secretary, Royal Commission on Ancient and Historical Monuments of Scotland, 1 Nelson Street, Edinburgh, 3.—*Secretary*.
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- 1907.*GUTHRIE, CHARLES, W.S., 3 Charlotte Square, Edinburgh, 2.
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- 1933.*HAGGART, Provost JAMES DEWAR, O.B.E., J.P., Eilean Riabhach, Aberfeldy, Perthshire.
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1933. HAMILTON, Sir ROBERT W., Knt., F.R.G.S., The Grange, Hadlow Down, Sussex.
- 1901.*HAMILTON OF DALZELL, The Right Hon. LORD, K.T., C.V.O., Dalzell, Motherwell.
1935. HAMPSON, CHARLES P., Wentworth, Eccles, Lancs.
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- 1927.*HARRISON, EDWARD S., The Bield, Elgin.
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- 1901.*LAMONT, Sir NORMAN, Bt., M.P., of Knockdow, Toward, Argyllshire.
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- 1934.*McNEILL, NEIL, of Ardnacross, Cloquhat, Bridge of Cally, Perthshire.
- 1909.*MacRAE, Colonel Sir COLIN WILLIAM, C.V.O., C.B.E., V.L., Colintrave, Argyll.
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1928. MALCOLM, Sir IAN, of Poltalloch, K.C.M.G., D.L., J.P., Poltalloch, Kilmartin, Argyll.
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1933. MASON, JOHN, 20 Abbotsford Street, Dundee.
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1938. MATHEW, JAMES, 18 Airlie Place, Dundee.
- 1892.*MAXWELL, Sir JOHN STIRLING, Bt., K.T., D.L., H.R.S.A., Pollok House, Glasgow, S. 3,—*President*.
1935. MAXWELL, J. HARRISON, M.A., 21 Tay Crescent, Riddrie, Glasgow.
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- 1924.*MEIKLE, Rev. JAMES, B.D., 15 St Clair Terrace, Edinburgh, 10.
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1911. MILLER, STEUART NAPIER, M.A., Lecturer in Roman History, The University, Glasgow.
1929. MILLER, Rev. THOMAS, St Helen's Manse, High Bonnybridge, Stirlingshire.
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1938. MITCHELL, Major GEORGE A. G., M.B., Ch.M., Craigview, Braemar Road, Ballater.
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1938. MITFORD, T. BRUCE, B.A., Lecturer in Humanity, The University, St Andrews.
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1933. ROBB, JAMES A. T. (no address).
1933. ROBERTS, FERDUS, Town Clerk, Kirkden, Kirktonhill, Dumbarton.
1940. ROBERTS, Rev. MATTHEW JOHN, M.A., A.K.C., Chaplain, Royal Air Force, c/o The Air Ministry, London.
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1938. SCOTT, Miss JUDITH D. GUILLUM, Honorary Secretary of the Southern Provincial Committee of the Central Council for Care of Churches, 94A Cromwell Road, South Kensington, London, S.W. 7 (during war at Earlsam, Dunster, Somerset).
1935. SCOTT, LAURENCE GRAY, Vingolf, Lerwick, Shetland.
1936. SCOTT, W. DAWSON, County Road Surveyor, Kirkwall, Orkney.
- 1931.*SCOTT, W. LINDSAY, D.S.C., B.A., 7 Lambolle Road, Hampstead, London, N.W. 3.
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- 1926.*THOMPSON, Professor HAROLD WILLIAM, A.M., Ph.D., New York State College, Albany, New York State, U.S.A.
- 1906.*THOMSON, DAVID COUPER, J.P., D.L., Invercayon, Broughty Ferry.
1920. THOMSON, GEORGE CLARK, Barrister-at-Law, P.O. Box 880, Swift Current, Saskatchewan, Canada.
1913. THOMSON, JAMES, The Cedars, 21 Fortis Green, East Finchley, London, N. 2.
1930. THOMSON, JAMES CORNWALLIS, C.A., 13 Loudon Terrace, Glasgow, W. 2.
1913. THOMSON, JOHN GORDON, S.S.C., 54 Castle Street, Edinburgh, 2.
1927. THOMSON, J. F. GORDON, M.A., Advocate, 26 Heriot Row, Edinburgh, 3.
1931. THOMSON, J. MILLER, W.S., 5 St Colme Street, Edinburgh, 3.

1926. THOMSON, LESLIE GRAHAME, A.R.S.A., A.R.I.B.A., F.R.I.A.S., "Srongara," West Linton, Peeblesshire.
1927. THOMSON, Mrs. Callands, West Linton, Peeblesshire.
1937. THOMSON, ROBERT, B.Sc., Ph.D., A.M.I.Mech.E., R.A.F.V.R., F.R.S.E., "Moorfield," Butler's Cross, Aylesbury, Bucks.
1936. THOMSON, THOMAS LAUDER, M.D., D.P.H., County Medical Officer, Dunbartonshire, Lauderdale, Dumbarton.
1911. THORBURN, Lt.-Col. WILLIAM, O.B.E., Woodville, St John's Road, Annan, Dumfriesshire.
1930. THORNEYCROFT, WALLACE, of Dalruizion, Chalmington, Dorchester.
1932. THRIEPLAND, PATRICK WYNDHAM MURRAY, Dryburgh Abbey, St Boswells.
- 1933.*THYNE, JAMES COWAN, St Helena, Downfield, Dundee.
1930. TOD, THOMAS M., West Brackly, Kinross.
1924. TOD, WILLIAM A., of Mackenzie Island, Portnahaven, Isle of Islay.
1935. TOLLAND, Rev. JAMES, The Manse, Belmont Church Road, Belfast.
1936. TOWILL, Rev. EDWIN S., M.A., B.D., 32 Blacket Place, Edinburgh, 9.
- 1902.*TRAILL, H. LIONEL NORTON, F.R.G.S., Capt., 4th Highland Light Infantry, c/o Captain M. P. Traill-Smith, R.N., "Wainsford," Herschel Road, Claremont, Capetown, South Africa.
1917. TRAILL, WILLIAM, C.E., J.P., Holland, Papa Westray, Orkney.
1932. TRANTER, NIGEL G., The Cross Cottage, Aberlady.
1939. TRENCH, G. MACKENZIE, O.B.E., F.R.I.B.A., F.S.I., Glen Morven, Forest Drive, Kingswood, Surrey.
- 1922.*TROTTER, GEORGE CLARK, M.D., Ch.B. (Edin.), D.P.H. (Aberd.), F.R.S.E., Braemar, 17 Haslemere Road, Crouch End, London, N.8.
1924. TULLIS, Major JAMES KENNEDY, Baingle Brae, Tullibody, by Stirling.
1925. TULLOCH, JAMES, M.A., 5 Wilton Gardens, Glasgow, N.W.
1934. TULLOCH, ROBERT G., M.A., 10 East Camus Road, Fairmilehead, Edinburgh, 10.
1936. TUNSTALL, W. H., Monkholme, Corbiehill Road, Davidson's Mains, Edinburgh, 4.
1922. TURNBULL, JOHN W., Kilbride, Millhouse, Tighnabruich, Argyll.
1925. TURNER, FRED. A., F.R.Hist.S., Lasswade Cottage, 15 Penwerrie Avenue, Osterley, Middlesex.
1937. TYZACK, FRANCIS JAMES, A.R.P.S., F.R.S.A., Laurel Cottages, Dronfield-Woodhouse, near Sheffield.
- 1917.*URQUHART, ALASTAIR, D.S.O., Latimer Cottage, Latimer, near Chesham, Bucks.
1930. VALE, THOMAS H., A.C.A., Pakington House, 154 Rosemary Hill Road, Little Aston, Staffs.
- 1935.*VALENTINE, WILLIAM HARRIS, The Mansion House, Auchterhouse, by Dundee.
1936. VAN GIFFEN, Professor A. E., Biologisch Archaeologisch Instituut, Rijks Universiteit, Poststr. 6, Groningen, Holland.
- 1920.*VARMA, Prof. S. P., M.A., of Robertson College (no address).
- 1933.*VEITCH, GEORGE, C.A., 14 Chalmers Crescent, Edinburgh, 9.
1921. WADDELL, J. JEFFREY, I.A., Architect, Caldergrove, Hallside, Lanarkshire.
1928. WALKER, ALEXANDER, 424 Great Western Road, Aberdeen.
1928. WALKER, Rev. GEORGE A. EVERETT, Minister of Parish of Benholme, Manse of Benholme, Johnshaven, Montrose.
1937. WALKER, NINIAN, Solicitor, Commercial Bank Buildings, Dunfermline.
1926. WALKER, ROBERT J., M.A., 17 Pentland Crescent, Edinburgh, 10.
1936. WALLACE, DAVID SWAN, W.S., 6 Eton Terrace, Edinburgh, 4.
1928. WALLACE, JAMES, M.A., Rector of Vale of Leven Academy, "Glenleven," Alexandria, Dunbartonshire.
1936. WALLACE, Rev. WILLIAM ANGUS, The Manse of Guthrie, by Forfar.
- 1927.*WALLIS, W. CYRIL, Assistant Keeper, Art and Ethnographical Department, Royal Scottish Museum, 53 Spottiswoode Street, Edinburgh, 10.
1937. WARD, GUY ARTHUR, Genealogist, Olde Kiln, Grange Road, St Peter's-in-Thanet.

1919. WARR, The Very Rev. CHARLES LAING, C.V.O., M.A., D.D., Minister in St Giles Cathedral, Dean of the Most Ancient and Most Noble Order of the Thistle, and Dean of the Chapel Royal in Scotland, 63 Northumberland Street, Edinburgh, 3.
1923. WARRACK, MALCOLM, 7 Oxford Terrace, Edinburgh, 4.
1932. WASON, C. R. (no address).
1916. WATERSON, DAVID, R.E., Bridgend House, Brechin.
1924. WATERSTON, CHARLES B., 25 Howard Place, Edinburgh, 4.
1933. WATERSTON, Professor DAVID, M.A., M.D., F.R.C.S.E., Bute Professor of Anatomy, 5 Windmill Road, St Andrews, Fife.
1904. WATLIN, H. STEWARD, Architect, Plas Conwy, Gogarth, Llandudno, N. Wales.
- 1907.*WATSON, CHARLES B. BOOG, F.R.S.E., 24 Garscube Terrace, Murrayfield, Edinburgh, 12.
1924. WATSON, GEORGE MACKIE, F.R.I.B.A., 17 East Claremont Street, Edinburgh, 7.
1913. WATSON, G. P. H., F.R.I.B.A., Royal Commission on Ancient and Historical Monuments of Scotland, 27 York Place, Edinburgh, 1.
1922. WATSON, HENRY MICHAEL DENNE, C.A., 12 Henderland Road, Murrayfield, Edinburgh, 12.
- 1927.*WATSON, JOHN HILL, of Grangehill, Beith, Ayrshire.
- 1908.*WATSON, JOHN PARKER, W.S., Greystane, Kinellan Road, Murrayfield, Edinburgh, 12.
1930. WATSON, THOMAS WILLIAM, J.P., The Schoolhouse, Gullane.
- 1927.*WATSON, WILLIAM ELDER, O.B.E., J.P., Moray Bank, Elgin.
1912. WATSON, WILLIAM J., M.A., LL.D., D.Litt.Celt., F.R.S.E., Emeritus Professor of Celtic Languages, Literature and Antiquities, University of Edinburgh, 17 Merchiston Avenue, Edinburgh, 10.
1933. WATT, Rev. DOUGLAS W., M.A., The Manse of Pluscarden, Elgin.
- 1907.*WATT, JAMES, LL.D., W.S., F.E.A., 7 Blackford Road, Edinburgh, 9.
1908. WATT, The Very Rev. LAUCHLAN MACLEAN, M.A., B.D., D.D., LL.D., Kinloch, Lochcarron, Ross-shire.
- 1923.*WATT, WILLIAM J. C., M.B., Ch.B., 71 High Street, Paisley.
1937. WEDDERBURN, ERNEST MACLAGAN, M.A., LL.B., D.Sc., LL.D., Deputy Keeper of His Majesty's Signet, 6 Succoth Gardens, Edinburgh, 12.
- 1928.*WEIR, Rev. HAROLD GEORGE MULLO, M.A., The Manse, Dalry, Kirkcudbrightshire.
1925. WEIR, JAMES MULLO, S.S.C., 21 Mayfield Terrace, Edinburgh, 9.
1939. WEIR, JOHN L., M.A., 153 West Regent Street, Glasgow, C. 2.
1927. WEIR, WALTER, 18 Cathkin Road, Langside, Glasgow, S. 2.
1926. WESTELL, W. PERCIVAL, F.I.S., F.R.S.A., Letchworth Public Museum, Town Square, Letchworth, Herts.
1932. WESTON, PERCY WILLIAM, F.R.E.S., F.R.G.S., F.R.H.S., F.C.S., F.Z.S., Villa Chappott, Tangier, Morocco.
1937. WESTWATER, ALEXANDER, Publisher, Station Road, Lochgelly, Fife.
1939. WHITE, JOHN, 18a Arthur Street, Edinburgh, 6.
1925. WHITE, WILLIAM, 28 Shore Road, Anstruther, Fife.
1909. WHITTAKER, CHARLES RICHARD, F.R.C.S., F.R.S.E., Lynwood, 27 Hatton Place, Edinburgh, 9.
1937. WIGHTMAN, A. STUART, F.R.A.I., F.Z.S., c/o The Clydesdale Bank, Ltd., 324 Duke Street, Glasgow.
1897. WILLIAMS, H. MALLAM, J.P., Tilehurst, 34 Southern Road, West Southbourne, Bournemouth, Hants.
1930. WILSON, ARTHUR, J.P., 6 Saltoun Gardens, Glasgow, W. 2.
1935. WILSON, ARTHUR W., "Rannerdale," Venturefair Avenue, Dunfermline.
1933. WILSON, DAVID, A.R.I.A.S., 15 Prospect Bank Place, Leith, Edinburgh, 6.
1929. WILSON, GEORGE VICTOR, H.M. Geological Survey, 19 Grange Terrace, Edinburgh, 9.
1933. WILSON, JAMES PEARSON, Millbank, Privick Mill, Ayr.
1934. WILSON, Major MAURICE J. H., The Queen's Own Cameron Highlanders, Ashmore, Bridge of Cally, Perthshire.
1932. WILSON, P. DOUGLAS, M.Inst.C.E., 78 Comiston Drive, Edinburgh, 10.
- 1927.*WILSON, ROBERT, 139 Princes Street, Edinburgh, 2.
- 1923.*WILSON, Rev. S. GORDON F., M.A., B.Litt., A.K.C., F.R.Hist.S., Blean Vicarage, near Canterbury, Kent.
1913. WILSON, Rev. THOMAS, B.D., D.D., Flat 5, Meyrick Park Mansions, Bodorgan Road, Bournemouth.
1920. WISHART, DAVID, Pittastow, Abernethy, Perthshire.
- 1934.*WISHART, FREDERICK, 632 King Street, Aberdeen.

1929. WOLFENDEN, WILLIAM, J.P., Cluny Villa, Kingussie, Inverness-shire.
1936. WOOD, WILLIAM HENRY, Missioner to the Deaf (no address).
1930. WRIGHT, ALEXANDER, L.R.I.B.A., 110 Blythwood Street, Glasgow, C.2.
1938. WRIGHT, Rev. RONALD SELBY, M.A., The Manse of the Canongate, Edinburgh, 8.
1927. WRIGHT, Rev. WILLIAM, M.A., B.D., Minister of the Parish of Wardlawhill, 21 Clincarthill, Rutherglen.
1925. WYNESS, J. FENTON, A.R.I.B.A., A.I.Archts.Scot., 45 Salisbury Terrace, Aberdeen.
1938. YATES, Miss AGNES AITKEN, B.Sc., Greenvale, Ardbeg Road, Rothesay.
1937. YOUNG, Mrs H. NUGENT, 10 Onslow Court, Drayton Gardens, London, S.W. 10.
1933. YOUNG, ROBERT STOKER, J.P., Hon. Sheriff-Substitute of Fife and Kinross, Duncroft, Kinross.
1934. YOUNG, T. P. W., A.R.I.B.A. (Flying Officer, R.A.F.) c/o Messrs Glyn Mills & Co. (Holts Branch), Kirkland House, Whitehall, London, S.W. 1.
1937. YOUNG, WILLIAM ROSS, "Drumveigh," Barnton Avenue, Edinburgh, 4.
1929. YOUNGER, Mrs J. P., Arnsbrae, Cambus, Clackmannanshire.
- 1939.*YULE, BRIAN JOHN GEORGE, 28 Queen's Crescent, Edinburgh, 9.

CORRESPONDING MEMBERS

1937. ANDERSON, R. W., Whitestone Knowe, Peebles.
 1923. BLACK, GEORGE F., Ph.D., 325 Watson Avenue,
 Lyndhurst, New Jersey, U.S.A.
 1927. BREMNER, SIMON, Mid Town, Freswick, Caithness.
 1928. FORTUNE, JOHN ROBERT, Airhouse, Oxtou,
 Berwickshire.
 1915. MATHIESON, JOHN, F.R.S.E., 42 East Claremont
 Street, Edinburgh, 7.
 1936. MOAR, PETER, Commission Agent, 4 Thorfinn
 Street, Lerwick, Shetland.
 1915. MORRISON, MURDO, Lakefield, Bragar, Lewis.
 1931. SMITH, SAMUEL, Mumrills, Laurieston, near
 Falkirk.
 1936. TAIT, DAVID, 14 Glendevon Place, Edinburgh, 12.
 1933. YORSTON, JAMES, Yerville, Rousay, Orkney.

HONORARY FELLOWS

1897. SIR W. M. FLINDERS PETRIE, D.C.L., LL.D., F.B.A., F.R.S., Emeritus Professor of Egyptology
 in University College, London, W.C. 1.
 1908. Professor H. DRAGENDORFF, Freiburg i. Baden, Johan von Weirthestrasse 4.
 1923. M. L'ABBÉ H. BREUIL, D.L.C., Professeur au Collège de France et à l'Institut de Paléontologie
 Humaine, Paris, 52 Avenue de la Motte Piquet, Paris, XV^e.
 Professor FRANZ CUMONT, 19 Corso d'Italia, Rome.
 Sir G. F. HILL, K.C.B., M.A., LL.D., F.B.A., Litt.D., F.S.A., 12 Sussex Place, Regent's Park,
 London, N.W. 1.
 FRANK GERALD SIMPSON, M.A., 44 Brampton Road, Carlisle.
 Mrs ARTHUR STRONG, C.B.E., Litt.D., LL.D., F.S.A., Life-Fellow of Girton College, Cambridge,
 and Assistant Director of the British School at Rome, 35 Via Balbo, Rome (22).
 A. M. TALLGREN, Professeur Universitetet, Helsingfors, Finland.
 1926. MARCELLIN BOULE, Professor in the Musée National d'Histoire Naturelle, and Director of
 the Institut de Paléontologie Humaine, 1 rue René Panhard, boulevard Saint-Marcel, Paris
 13^e.
 Professor Dr philos. A. W. BRØGGER, Bestyrer av Universitetets Oldsaksamling, Tullinløkken,
 Oslo, Norway.
 O. M. DALTON, M.A., F.B.A., Holford, Somerset.
 Professor Dr ERNST FABRICIUS, Geheimer Rat, Goethestrasse 44, Freiburg im Breisgau,
 Germany.
 Sir ARTHUR KEITH, M.D., D.Sc., LL.D., F.R.C.S. (Eng.), F.R.S., Conservator of the Museum
 and Hunterian Professor, Royal College of Surgeons of England; Past-President of the Royal
 Anthropological Institute of Great Britain and Ireland, and of the Anatomical Society.
 Master of the Buckston Browne Farm, Downe, Farnborough, Kent.
 Dr R. PARIBENI, Director of the Institute of Archæology of Rome, Museo Nazionale Romano,
 Rome.

1927. DON HERMILIO ALCALDE DEL RIO, Torrelavega, Santander, Spain.
1931. Mrs M. E. CUNNINGTON, 33 Long Street, Devizes, Wiltshire.
Professor Dr ROBERT ZAHN, Director bei den Staatlichen Museen, Honorar-professor an der Universität, Am Lustgarten, Berlin, C.2.
1933. Professor Dr philos. HAAKON SHETELIG, Bergens Museum Oldsamling, Bergen, Norway.
1935. Professor GERHARD BERSU, Zentralkommission des Archäologischen Instituts des Deutschen Reiches, Woyrschstr. 30 c., Berlin, W. 35.
1939. Professor Dr ANDREAS ALFÖLDI, Pázmány-Universität, Múzeum-Korut 6-8, Budapest, VIII.
O. G. S. CRAWFORD, H.M. Ordnance Survey, Southampton.

LADY ASSOCIATE

1900. Professor Emeritus M. A. MURRAY, 18 Regents Terrace, Cambridge.

SOCIETIES, INSTITUTIONS, &c., EXCHANGING PUBLICATIONS.

- | | |
|---|--|
| Architectural, Archaeological, and Historic Society of Chester and North Wales. | Royal Archaeological Institute of Great Britain and Ireland. |
| Belfast Natural History and Philosophical Society. | Royal Commission on Ancient and Historical Monuments of Scotland. |
| Berwickshire Naturalists' Club. | Royal Commission on the Ancient and Historical Monuments and Constructions in Wales and Monmouthshire. |
| Bristol and Gloucestershire Archaeological Society. | Royal Historical Society. |
| Buchan Club. | Royal Institute of British Architects, London. |
| Buteshire Natural History Society. | Royal Irish Academy. |
| Cambrian Archaeological Association. | Royal Numismatic Society. |
| Cambridge Antiquarian Society. | Royal Society of Antiquaries of Ireland. |
| Carmarthenshire Antiquarian Society. | Scottish Ecclesiastical Society. |
| Courtauld Institute of Art. | Shropshire Archaeological Society. |
| Cumberland and Westmorland Antiquarian and Archaeological Society. | Society for the Promotion of Roman Studies. |
| Derbyshire Archaeological Society. | Society of Antiquaries of London. |
| Dumfriesshire Natural History and Antiquarian Society. | Society of Antiquaries of Newcastle-upon-Tyne. |
| Edinburgh Architectural Association. | Somersetshire Archaeological and Natural History Society. |
| Edinburgh Geological Society. | Stirling Natural History and Archaeological Society. |
| Elgin Literary and Scientific Society. | Surrey Archaeological Society. |
| Essex Archaeological Society. | Sussex Archaeological Society. |
| Gaelic Society of Inverness. | Third Spalding Club. |
| Glasgow Archaeological Society. | Viking Society for Northern Research. |
| Hampshire Field Club and Archaeological Society. | Wiltshire Archaeological Society. |
| Hawick Archaeological Society. | Yorkshire Archaeological Society. |
| Historic Society of Lancashire and Cheshire. | |
| Institute of Archaeology, Liverpool. | |
| Kent Archaeological Society. | |
| Orkney Antiquarian Society, Kirkwall. | |
| Perthshire Society of Natural Science. | |
| Powys-land Club. | |
| Royal Anthropological Institute. | Archaeological Survey of India. |
| | British School at Rome. |

Colombo Museum, Ceylon.
 Royal Canadian Institute, Toronto.
 Royal Ontario Museum of Archaeology, Toronto, 5,
 Canada.
 University Museum, Dunedin, New Zealand.

FOREIGN SOCIETIES, UNIVERSITIES,
 MUSEUMS, &c.

Académie des Inscriptions et Belles Lettres, Paris.
 Académie des Sciences, Leningrad, U.S.S.R.
 Académie des Sciences d'Ukraine, Kieff.
 Académie Royale Serbe, Belgrade.
 Administration des Monuments, Riga, Latvia.
 Anthropologische Gesellschaft, Vienna, Ostmark,
 Germany.
 Antiquarische Gesellschaft, Zürich.
 Archaeological Institute of the Imperial University
 of Kyoto, Japan.
 Archaeologisches Institut D. Kön. Ung. Franz
 Joseph-Universität, Szeged, Hungary.
 Archaeologisches Institut der Pázmány Universität,
 Budapest.
 Archaeologisches Institut des Deutschen Reiches
 Römisch-Germanische Kommission, Frankfurt
 am Main.
 Associació Catalana d'Antropologia, Etnologia i
 Prehistòria, Barcelona Universitat, Spain.
 Bosnisch-Herzegovinisches Landes-Museum, Sara-
 jevo, Jugoslavia.
 Bureau of Ethnology, Washington.
 California University, Berkeley.
 Commissione Archeologica Comunale di Roma.
 Cornell University Library, Ithaca, New York.
 Čal. státní archaologický ústav (Institut archéolo-
 gique de l'Etat tchécoslovaque) Praha, Re-
 publika československá, Czechoslovakia.
 Department of Antiquities in Palestine, Jerusalem.
 Deutsch-ausländischer Buchtausch, Berlin.
 Ecole d'Anthropologie de Paris.
 Faculté des Sciences de Lyon.
 Field Museum of Natural History, Chicago.
 Föreningen til Norske Fortidsmindemerkens
 Bevaring.
 Göteborg och Bohuslänns Fornminnesföreningen.
 Göttingen University.
 Historische und Antiquarische Gesellschaft, Basel.
 Historischer Verein für Niedersachsen.
 Institut Archéologique Bulgare, Sofia.
 Institut de Paléontologie Humaine, Paris.
 Istituto Italiano di Antropologia, Rome.

Junta Superior de Excavaciones y Antigüedades,
 Madrid.
 Kiel University.
 Kongelige Norske Videnskabs Selskab, Trondhjem.
 Landesanstalt für Volkskunde, Halle a Saale,
 Saxony.
 Landesmuseum, Hannover.
 Landesmuseum Nassauischer Altertümer zu Wies-
 baden.
 Leipzig University.
 Musée Archéologique Erasie Majewski de la Société
 des Sciences de Varsovie, Poland.
 Musée d'Art et d'Histoire, Geneva, Switzerland.
 Musée Guimet, Paris.
 Musée National Suisse à Zürich.
 Museum, Bergen, Norway.
 Museum of Northern Antiquities, Oslo.
 National Bohemian Museum, Prague, Czecho-
 slovakia.
 National Museum, Zagreb, Yugoslavia.
 Nordiska Museet, Stockholm.
 Norsk Folkemuseum, Oslo, Norway.
 Oslo University, Norway.
 Peabody Museum, Cambridge, Mass., U.S.A.
 Prähistorische Kommission der Akademie der
 Wissenschaften in Wien, Ostmark, Germany.
 Prussia-Museum, Königsberg (P).
 Reale Accademia Nazionale dei Lincei, Rome.
 Rhein. Landesmuseum, Trier.
 Rijks-Museum van Oudheden, Leiden.
 Römisch-Germanischen Zentral Museum, Mainz,
 Germany.
 Royal Academy of History and Antiquities,
 Stockholm.
 Royal Society of Northern Antiquaries, Copenhagen.
 Schlesischer Altertumsverein, Breslau.
 Smithsonian Institution, Washington, U.S.A.
 Société d'Anthropologie de Paris.
 Société des Antiquaires de l'Ouest.
 Société Archéologique du Midi de la France.
 Société Archéologique de Montpellier.
 Société Archéologique de Moravie.
 Société Archéologique de Namur.
 Société des Bollandistes, Brussels.
 Société Finlandaise d'Archéologie, Helsingfors.
 Société d'Histoire et d'Archéologie de Gand.
 Société Nationale des Antiquaires de France.
 Société Préhistorique Française, Paris.
 Société Préhistorique Polonaise.
 Société Royale d'Archéologie, Bruxelles.
 Städtisches Museum für Volkerkunde, Leipzig.
 Stavanger Museum, Stavanger, Norway.

Türk Tarih Kurumu, Ankara, Turkey.
 University Library, Lund, Sweden.
 University Library, Tartu, Esthonia.
 Upsala University.
 Verein für Nassauische Alterthumskunde, Wiesbaden.
 Verein von Alterthumsfreunden im Rheinlande, Bonn.
 Wiener Præhistorische Gesellschaft, Ostmark, Germany.

PERIODICALS.

L'Anthropologie, Paris.
Bulletin archéologique polonaise, Warsaw.

LIBRARIES, BRITISH.

Athenæum Club Library, London.
 Baillie's Institution, Glasgow.
 Bodleian Library, Oxford.
 British Museum Library.
 Chetham's Library, Manchester.
 Church of Scotland College Library, The Mound, Edinburgh.
 Free Library, Edinburgh.
 Free Library, Liverpool.
 Mitchell Library, Glasgow.
 National Library of Scotland, Edinburgh.
 National Library of Wales, Aberystwyth.

Ordnance Survey Library, Southampton.
 Public Record Office Library, London.
 Royal Library, Windsor.
 Royal Scottish Museum Library, Edinburgh.
 Scottish National Portrait Gallery Library.
 Scottish Record Office, Historical Department.
 Signet Library, Edinburgh.
 Trinity College Library, Dublin.
 University Library, Aberdeen.
 University Library, Cambridge.
 University Library, Edinburgh.
 University Library, Glasgow.
 University Library, St Andrews.
 Victoria and Albert Museum Library, London.

LIBRARIES, FOREIGN.

Bayerische Staatsbibliothek, Munich, Bavaria.
 Bibliothèque d'Art et d'Archéologie, Université de Paris.
 National Library, Paris.
 National Library, Vienna.
 Newberry Library, Chicago, U.S.A.
 Preussische Staatsbibliothek, Berlin.
 Public Library, Hamburg.
 Royal Library, Copenhagen.
 Royal Library, Stockholm.
 Sächsische Landesbibliothek, Dresden.

SUBSCRIBING LIBRARIES, ETC.

American Philosophical Society.
 Ashmolean Museum, Oxford.
 Birmingham Public Libraries—Reference Library.
 Carnegie United Kingdom Trust—The Scottish Central Library for Students, Dunfermline.
 Chicago University Libraries, Chicago, U.S.A.
 Cleveland Public Library, Ohio, U.S.A.
 *Columbia University.
 Department of British and Mediæval Antiquities, British Museum.
 Detroit Public Library, Detroit, U.S.A.
 Dr Hay Fleming Library, The University, St Andrews.
 *Faculty of Procurators' Library, Glasgow.
 Falkirk Archaeological and Natural History Society.
 Falkirk Public Library.
 Free Public Library, Boston, Massachusetts, U.S.A.
 Harvard College, U.S.A.
 Henry E. Huntington Library and Art Gallery, San Marino, California, U.S.A.
 Institute of Accountants and Actuaries in Glasgow.
 Jesus College, Oxford.
 John Rylands Library, Manchester.

Metropolitan Museum of Art, New York, U.S.A.
 National Museum of Wales, Cardiff.
 New York Public Library, New York.
 Pennsylvania Historical Society, Philadelphia, U.S.A.
 Public Library, Aberdeen.
 Public Library, Dundee.
 Public Library of Victoria, Melbourne, Australia.
 Public Library, Civic Center, San Francisco, California, U.S.A.
 Reform Club, Pall Mall, London, S.W. 1.
 State Historical Society of Wisconsin, Madison, Wisconsin, U.S.A.
 *Stornoway Public Library, Island of Lewis.
 University College, Dublin.
 University Library, Durham.
 University Library, Leeds.
 University of London, W.C. 1.
 University of Manchester.
 University of Michigan, Ann Arbor.
 University of Minnesota, U.S.A.
 University of Pennsylvania, Philadelphia, Pa., U.S.A.
 Yale University Library, New Haven, Connecticut, U.S.A.

PROCEEDINGS

OF THE

SOCIETY OF ANTIQUARIES OF SCOTLAND

ONE HUNDRED AND SIXTY-FIRST SESSION, 1940-1941

ANNIVERSARY MEETING, 30th November 1940.

ALEXANDER O. CURLE, C.V.O., LL.D., Vice-President,
in the Chair.

William K. Dickson, LL.D., and W. G. C. Hanna, O.B.E., were appointed Scrutineers of the Ballot for Office-Bearers.

The Ballot having been concluded, the Scrutineers found and declared the List of the Council for the ensuing year to be as follows:—

President.

Sir JOHN STIRLING MAXWELL, Bart., K.T.

Vice-Presidents.

The Hon. LORD ST. VIGEANS, LL.D.
ALEXANDER O. CURLE, C.V.O., LL.D.
Rev. WILLIAM BURNETT, B.D.

Councillors.

Sheriff C. H. BROWN, K.C.
WILLIAM ANGUS.
WILLIAM K. DICKSON, LL.D.
THOMAS YULE, W.S.
DAVID BAIRD SMITH, C.B.E., LL.D.
Professor D. TALBOT RICE.

IAN A. RICHMOND, M.A., F.S.A.
REGINALD F. J. FAIRLIE, LL.D.,
R.S.A., F.R.I.B.A.
Emeritus Professor W. B. STEVENSON,
D.Litt., D.D., LL.D.

Secretaries.

DOUGLAS P. MACLAGAN, W.S. | ANGUS GRAHAM, M.A.

For Foreign Correspondence.

Professor V. GORDON CHILDE, D.Litt.,
D.Sc., F.B.A.
VOL. LXXV.

Professor W. M. CALDER, LL.D.,
F.B.A.

Treasurer.

J. BOLAM JOHNSON, C.A.

Curators of the Museum.

JAMES CURLE, LL.D. | JAMES S. RICHARDSON.

Curator of Coins.

ROBERT KERR, M.A.

Librarian.

MARRYAT R. DOBIE, B.A.(Oxon.).

Councillors ex-officio.

The Hon. Sir HEW H. DALRYMPLE, K.C.V.O. } *Representing the Board of*
 KENNETH SANDERSON, W.S. } *Trustees.*
 JOHN A. INGLIS, K.C. *Representing the Treasury.*

A Ballot having been taken, the following were elected Fellows: Walter B. A. L. Chalmers, Civil Servant; J. E. Scott, B.A.

The Secretary read the following List of Members deceased since the last Annual Meeting: Stair C. Agnew, M.A., LL.B.; James Ballantine; The Rev. Charles D. Bentinck, D.D.; William Bonnar; Charles C. Calder; Charles Campbell, M.B.E.; The Right Hon. The Earl of Crawford and Balcarres, K.T., LL.D.; Henry James Crawford, B.S.(Lond.); William Johnston Cullen; James H. H. Macgregor Dowsett; Captain W. H. Drummond-Moray of Abercairney; Rev. David Duncan; Arthur Blake Easterbrook; Rev. William Edgar, B.A., B.D., Ph.D.; John Gibson; James Maxtone Graham, C.A.; William Mackie Greig; Mrs J. Macalister Hall of Killean; James Hamilton, J.P.; Professor R. K. Hannay, LL.D., H.R.S.A.; James Stewart Henderson; William Horn; Thomas Duncan Hunter, J.P.; Francis Caird Inglis; Henry Johnstone, M.A.(Oxon.); Charles Ker, LL.D., C.A.; Sir John Westall King, Bart.; John G. Kirkpatrick, W.S.; Arthur Ling; Sir George Macdonald, K.C.B., LL.D., D.Litt., F.B.A., H.R.S.A.; P. M. McIntyre; R. F. B. Mackay, B.A.(Cantab.), F.R.A.I.; Alexander J. Mackenzie; John Reid; John Richardson; W. S. Irvine Robertson, M.B., Ch.B., D.P.H.; John D. Ross, LL.D.; R. J. Serjeantson; Provost J. M. Slater; Ian Armour Smith; Charles Henry Taylor; W. Glassford Walker, C.A.; Harry J. Younger.

Corresponding Member : Alexander Mann.

The Secretary read the following Report by the Council on the affairs of the Society for the year ending 30th November 1940:—

The Council beg to submit to the Fellows of the Society their Report for the year ending 30th November 1940.

Fellowship.—The total number of Fellows on the roll at
 30th November 1939 was 986
 At 30th November 1940 the number was 948
 showing a decrease of 38

The number of new Fellows added to the roll during the year was 23, while 42 died, 12 resigned, and 7 allowed their membership to lapse.

It is with the greatest regret that we have to record the loss that the Society has sustained through the death of the President, Sir George Macdonald, K.C.B., M.A., F.B.A., D.Litt., LL.D. His record is one which cannot be matched in our annals, by virtue alike of his distinction in all branches of antiquarian study, of the learned and carefully reasoned papers that he contributed to our *Proceedings*, and of the untiring vigour and energy with which he strove at all times to advance the Society's interests. An account of his archæological work, with an appreciation of his services in advancing our knowledge, particularly of Roman Scotland, has been printed in Volume LXXIV of *The Proceedings*.

Sir George left to the Society, subject to a liferent, the sum of £1000, to be held as a Fund, the income of which is to be directed towards meeting the cost of excavations on sites which might throw light upon the Roman occupation of Scotland; and, in so far as not so used, the said income is to be accumulated and added to the capital of the said Fund, but without prejudice to the power of the Society to use such accumulations of income in the future in fulfilment of the purposes of the said Fund.

The Proceedings.—Volume LXXIV of *The Proceedings* is still in the press, and no advance copy is yet available for inspection. It contains 8 papers, of which one constitutes a most important contribution to our knowledge of the early sculptured stones of Scotland.

The Museum.—The number of relics added to the Museum during the year amounted to 135 by donation, 250 by bequest, and 1 acquired through the King's and Lord Treasurer's Remembrancer.

As no excavation work has been undertaken by the Society during the past year, owing to the war, it is not a matter of surprise that the acquisitions are fewer in number than in recent years. The grant from His Majesty's Treasury for the purchase of specimens has also been suspended, and expenditure on new exhibits must be considerably limited in the future.

An important addition to the Bronze Age Collection is a beaker urn and a flint knife, found in a cist at Thurston Mains, Haddington, which were presented by Mr and Mrs Hunter. A number of relics, found on excavation sites, have been donated by the proprietors through the Commissioners of His Majesty's Works.

A fifteenth-century iconographic ring, of silver-gilt, found at Hume Castle, Berwickshire, was presented by Miss Eleanor Warrender.

The bequest by Mr Charles E. Whitelaw of 235 objects, comprising Highland broadswords, dirks, pistols, powderhorns, brooches of brass

and silver, Luckenbooth brooches, also fine examples of the Edinburgh gunsmiths' work of the eighteenth and nineteenth centuries, together with a number of obsolete tools used by gunmakers, is one of the most important and valuable contributions to the Historical Collection which has ever been received. The Collection, which was exhibited on loan in the Museum for some years before Mr Whitelaw's death, is representative of the various types of Scottish weapons. It was arranged and labelled by Mr Whitelaw, personally, so as to make it as instructive to students as possible. Mr Whitelaw was well known as an authority on Scottish weapons, and the Society will appreciate and greatly value the bequest.

Bequests of Communion Tokens have been made by Mr A. S. Kinloch Paul and Miss J. C. C. Macdonald, and a two-handled silver quaich, made in Edinburgh by David Mitchell in 1737-38, was bequeathed by Mr John Richardson, F.S.A.Scot.

The Library.—Notwithstanding the difficult circumstances resulting from the war, the Library has remained open throughout the year. It has been made use of by many readers, both Fellows and members of the public. The suspension of the Treasury grant, already alluded to, has affected the Library as well as the Museum, and only 20 new volumes have been acquired by purchase. By donation, however, there have been contributed 70 volumes, while a bequest by the late Sir George Macdonald has added a further 112 of particular value and interest. The number of publications obtained by exchange with or subscription to learned societies has been much reduced by the war.

The Rhind Lectureship.—The Rhind Lectures of 1940, which were to have been delivered by Dr W. C. Dickinson, have had to be postponed. If it is found possible to arrange for a course by another lecturer during the year 1940-41, notification will be made to Fellows.

The Gunning Fellowship.—No award was made during 1940.

The Chalmers-Jervise Prize.—This prize was not advertised owing to the circumstances created by the war.

ALEX. O. CURLE,
Vice-President.

The Chairman moved the adoption of the Report and the motion was seconded by Dr W. Douglas Simpson.

The Accounts of the Society for the year 1938-39, which had been circulated amongst the Fellows, were unanimously approved. Adoption of the Accounts was moved by Mr John W. M. Loney, seconded by Mr W. T. Ketchen, and a hearty vote of thanks was accorded to the Treasurer.

I.

A KEG OF "BOG-BUTTER" FROM SKYE AND ITS CONTENTS.

BY PROFESSOR JAMES RITCHIE, M.A., D.Sc., F.S.A.Scot.

Read May 9, 1932.

THE CUSTOM OF BURYING BUTTER.

The practice of burying butter and fat in the earth, partly to preserve it against future need and partly to "mellow" its flavour, is at once an old custom and a modern usage. In Scotland several discoveries of such a kind have been made in peat-bogs, but here the custom has been commemorated neither in contemporaneous written records nor in tradition and must be regarded as ancient, as indeed the description of the Skye example will show. Ireland has yielded many similar discoveries, for "bog-butter is one of the commonest 'finds' in Irish bogs" according to Macalister (1928, p. 192). There, however, although the custom probably extended to times as remote, it was continued and was prevalent as late as the seventeenth century, when the allotted span of burial to produce the desired flavour was said to be seven years; and a sample found at Tirnakill Bay, Co. Galway, and contained in a wooden vessel on which was scratched the date 1789 (Arup, 1932, p. 300) carries the practice almost to the end of the eighteenth century.

In these cases the material is stated, as a rule, to have been butter, but body fat was sometimes treated in the same way. In his *Description of the Faroe Islands*, written in 1670, Debes tells how tallow, obtained principally from sheep, was rendered, cast into large pieces, and buried in moist earth "to keep it, it growing the better the longer it is kept" (Dr John Sterpin's translation in 1676).

The practice must have been well known in northern lands in past centuries, for, in addition to the countries mentioned above, it has been described from Iceland and Finland. But the burying of butter extended far beyond these lands, as is shown by examples mentioned below, from Fez in Morocco and Hunza in Kashmir. In a letter to *The Times*, dated 18th May 1932, the late Mr J. H. Stevenson wrote: "When I was in Tetuan, in 1899, Mr Bewick, the British Vice-Consul, told me that an underground hoard of ancient butter had been found, not long before, at Fez. The Sultan, understanding that the store was in condition to be considered a delicacy, confiscated it as treasure trove. The stuff was then discovered to have been buried too long to be eaten at all. He therefore sent it to Tetuan with orders to the Captain of the Market to allow no

butter to be exposed for sale there until the hoard was sold. Tetuan then witnessed the unusual spectacle of an alliance of Moslems, Christians, and Jews to buy up the Sultan's butter and clear the way for the marketing of their own, which they did."

Of the persistence of the custom to the present day an example from Kashmir was given by Lord Conway of Allington in a letter to *The Times* (14th May 1932), following upon the description in that newspaper of the Skye discovery. "In the year 1892, shortly after the Nile campaign, a small British Expeditionary Force occupied Hunza, and I believe I was the first traveller to visit that remote little principality after it came within the area of British Administration. Our people, when they occupied the little castellated town Baltit, found that one of the great luxuries reserved for the Rajah was ancient butter. I heard a good deal about it, but I never actually saw anything. I was informed that the Rajah every year laid down one or more big pots full of butter. I understood that these pots were dated. The older the butter the greater the luxury. These pots of butter, I believe, were buried in the ground at some recognised spot. From time to time the oldest pots were excavated and their contents were regarded as a delicacy. I believe I rightly remember that the colour of the old butter was black, and that our people consumed some of it with relish. Thus bog butter, found in Ireland or in Skye, perhaps carries on some ancient and widely spread tradition."

The present record, therefore, falls into line with an old and widespread economy, which originated when the preservation of fresh food was an intractable problem and palatable flavourings were scarce. The people of Faroe set great store upon their buried hoards of tallow because "the longer it is kept being so much the better, and forreign pyrates having little desire to rob it from them. It may, therefore, not unreasonably be termed a hidden treasure which rust does not consume, nor thieves steal away" (Debes, English translation, 1676).

DISCOVERY OF THE SKYE BOG-BUTTER.

During the peat-cutting season in the late spring of 1931 there was found in a peat-bog on the south of the main road, about 1 mile east of the inn at Kilmaluag, at the north end of Skye, a wooden barrel or keg full of the material known as bog-butter. The discoverer of this obviously ancient interment, Mr Hugh Mackay of Balmacquien, appreciating its interest, communicated with Mr Seton Gordon, from whom I received a fragment of the "butter" for identification; and this led to the ultimate arrival in Aberdeen, where I was then teaching, of the keg and its contents just as they had been resurrected.

The keg when found embedded in the solid peat bank was tilted a

little sideways, as if lack of lateral support had resulted in uneven settling upon the peat bed. Since the large keg found at Morvern in Argyllshire in 1879 and now in the National Museum of Antiquities was also found in a slanting position, the suggestion is that the kegs were not buried in a hole dug in solid peat, but were merely sunk in a water-filled peat-hole, which permitted a tilting of the mass as it settled upon the bottom. The point is of some interest because, if the barrel was simply deposited in a natural peat-hole, the peat layers lying over the barrel must have been formed since the barrel was placed there.

In a deep peat-bog from which peats have long been cut for fuel, it is almost impossible to be certain about the distance of a buried object from the original surface; for the bog is denuded in a series of "banks," so that the top layers may have been removed generations before cutting begins in the mid or lower layers. But as regards the present find this is certain, that in 1931 the top of the barrel lay rather more than 18 inches below the present surface at that place, and that Mr Mackay himself, in former years, had removed peat to a depth of more than 4 feet from the same place. So that the top of the barrel lay some 6 feet below the older surface, although even that may not have been the original surface of the deposit.

CONDITION OF KEG AND ATTEMPTS AT PRESERVATION.

Before I describe the keg and its contents, a note about its condition and the attempts which were made to preserve it may serve as a warning and at the same time an aid in dealing with future discoveries of the same kind.

Both the wood and the fatty mass it contained were saturated with water, the wood to such a degree that in places it could be rubbed into its constituent fibres with the fingers, while even the surfaces which looked most solid and fresh could be scooped out by the finger-nail as if the wood were thoroughly rotten. The contents were also so impregnated with water that when the mass was squeezed or simply cut, drops of water collected upon the surface.

It was realised that the preservation of an object in such condition would not be easy, and an attempt was made to dry it very gradually, so that the contents would support the barrel. The wood, however, drew in as the water left it, and the contents became rather powdery on the surface and increased in bulk, so that the disruption of the barrel was threatened. As it split longitudinally along old cracks, the opportunity was taken, by separating the two halves, to remove the entire contents (no easy matter) and allow the barrel to dry alone. Difficulties still arose, in spite of the addition of glycerine to prevent too rapid and thorough drying, from a tendency of the wood to become seriously warped. To

correct this tendency and preserve a semblance to the original shape, a cooper, Mr Gordon, who took a keen interest and share in the work, girded the keg with two iron hoops. These were, of course, no part of the original structure.

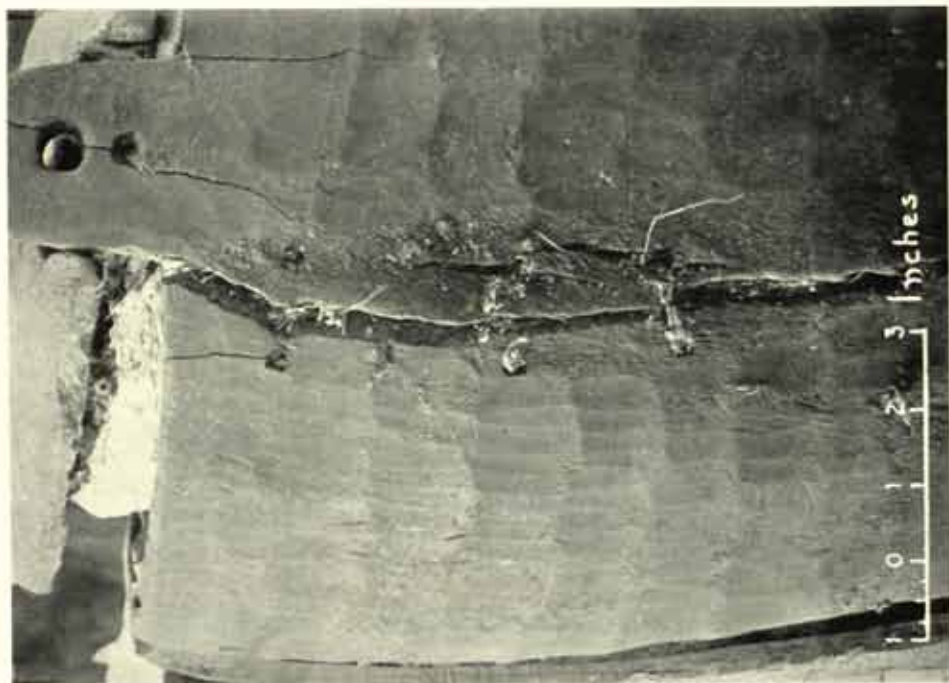
THE KEG AND ITS WORKMANSHIP.

The keg and its associated structures are in three pieces—the body of the barrel itself hewn from a solid piece of wood, a circular lid and a wooden bottom, both also carved from the solid, the latter, although not found at the uncovering of the keg, being discovered in the same place during the peat-cutting of the following year, 1932. The timber from which these objects have been carved is not easily recognisable, but a microscopical examination, made by Dr Laing of the Forestry Department of Aberdeen University, showed that all are of birch.

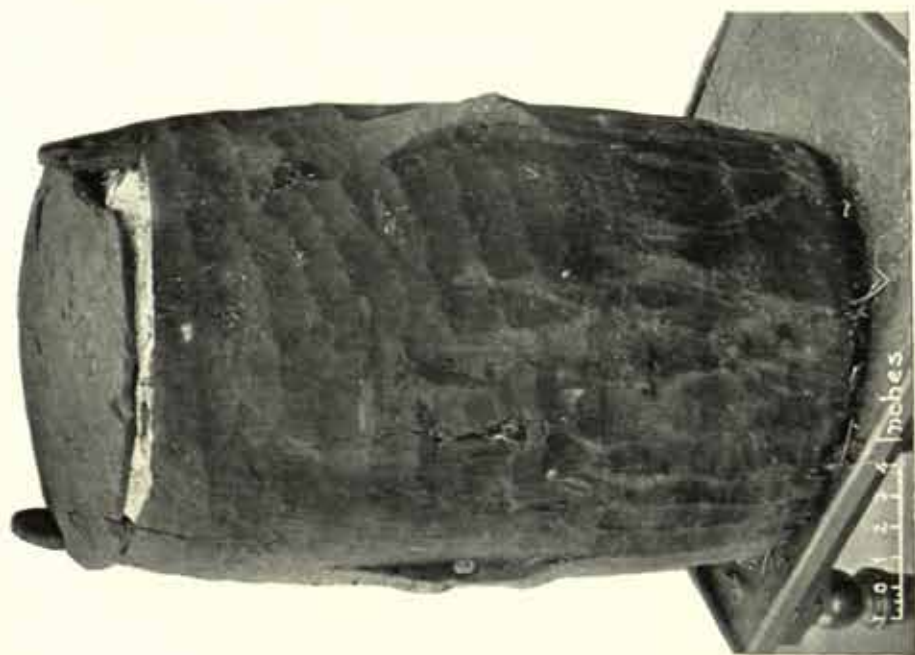
The body of the keg is a skilful piece of handiwork (see Pl. I, 1). It stood 21 inches high from base to upper edge, and varied in circumference from 43 inches at the top to 45 inches at the widest portion, measured through the holes in the side lugs. It was not quite round; the slightly oval outline in plan may have been due to warping in the bog, but it seemed rather as if the craftsman had been making the most of the natural shape of the tree-trunk from which the keg was carved.

The skill of the work was shown particularly in the uniform thickness of the walls; they were generally from $\frac{3}{8}$ to $\frac{7}{15}$ of an inch thick and seldom reached half an inch; the top edge was slightly bevelled away to a thinness of $\frac{1}{4}$ inch. The method of the workman is shown in the accompanying reproductions of photographs (Pl. I, 1 and 2, and Pl. II). The tool employed on the outside seems to have been an adze with a cutting face of about $1\frac{1}{4}$ inches, and it was used on most of the surface in a direction travelling round the girth, but at the base in a vertical direction. Inside the keg a smaller tool, with a cutting face of about $\frac{1}{2}$ inch, was used.

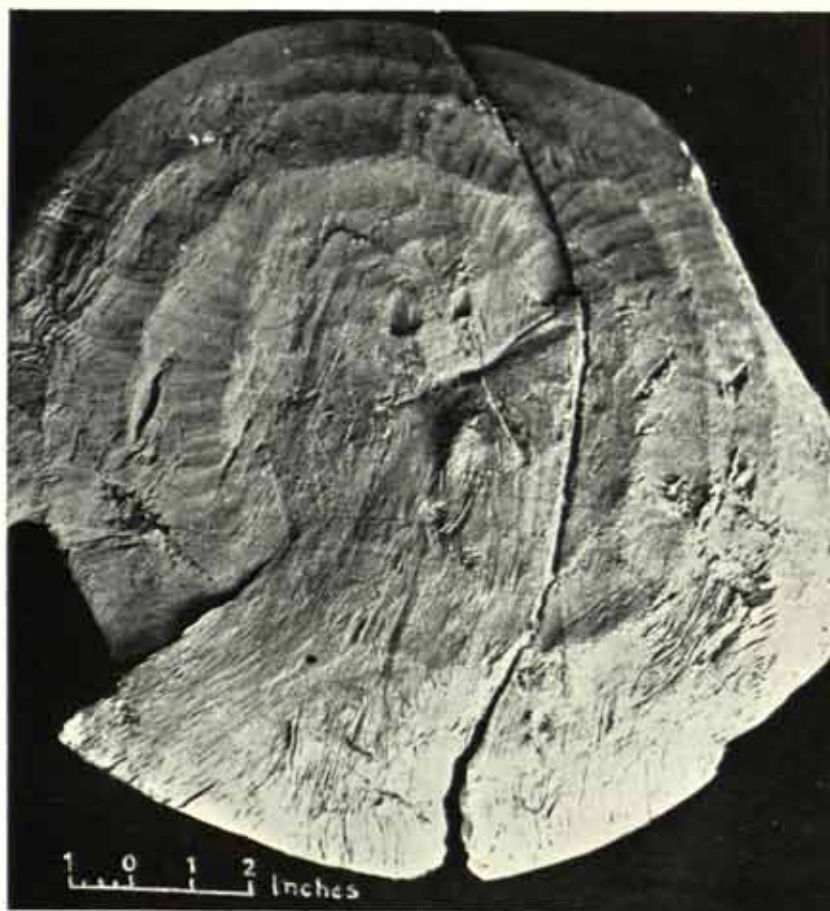
Of excrescences upon the body of the keg there were two pairs, both carved from the solid wood from which the body was made (Pl. I, 1). At exactly opposite sides of the upper edge were two projecting lugs, $2\frac{3}{4}$ inches high, each perforated by a large upper and smaller under hole. The larger holes may have been used for a rope to aid in lowering the keg into the bog and raising it; the smaller for the insertion of either a supple stick or some pliable fastening to keep the lid in place. The second pair of lugs, originally very strong, but much rubbed away on the surface, projected from the wall of the keg a little above its middle. Instead of being placed on diametrically opposite sides of the keg they stood considerably closer together, the distance separating them being $14\frac{3}{4}$ inches, where a half circumference measured $22\frac{1}{2}$ inches. Each was perforated by a compara-



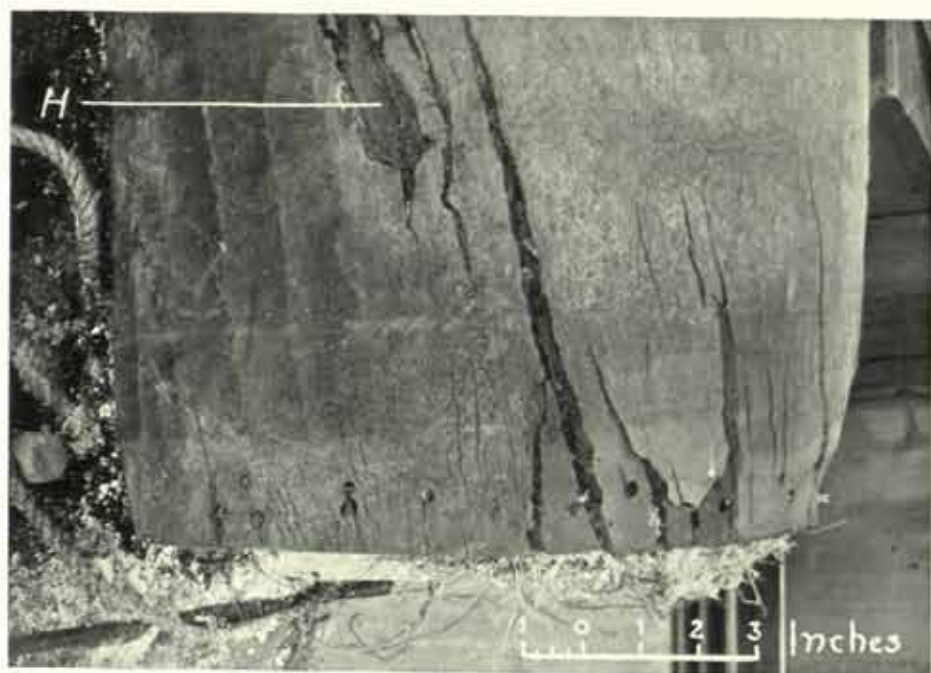
2. Upper part of keg, showing projecting mass of "butter," the characteristic tool work upon the timber, one of top lugs, and a crack which had been held together by thongs of hide.



1. Birch keg containing "bog-butter" from Kilmaluag, Skye.



Upper surface of lid of keg, showing method of carving, and in centre probable identification mark.

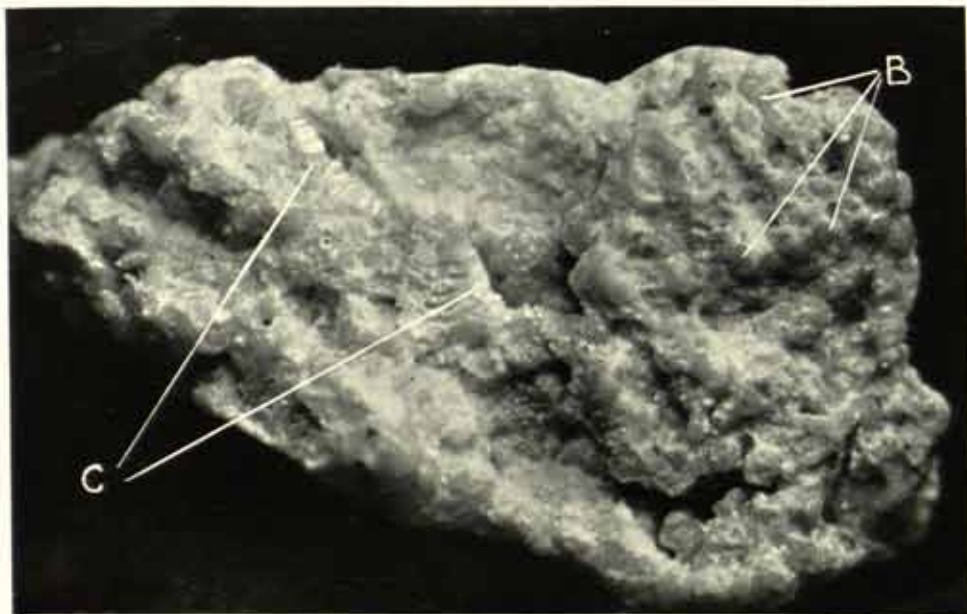


Lower part of keel, showing two series of holes by which successive bottoms were attached by thongs of hide, and hole stopped on inside by thin carved slip of wood (H). The pale band at the bottom of the keel shows the part overlapped by the rim of the bottom piece.



1 0 1 2 3 Inches

1. Butter keg from Kyleakin, Skye, in National Museum of Antiquities of Scotland.



2. Magnified fragment of "butter" from the margin of the Kilmaluag mass, showing translucent spheres (B), and an alteration product in the form of minute scaly crystals (C). Magnified 6 diameters.

JAMES RITCHIE.

tively small oval hole, and the suggestion I make is that these lugs and their holes were used to allow the passage of a rope by which the keg could be strapped to the back of a man or a pack-pony.

The circular lid was dressed by an adze-like implement worked in a spiral direction from centre to circumference (Pl. II). It was slightly convex on the outside, concave inside, beautifully graded from a thickness of $\frac{5}{8}$ of an inch at the middle to $\frac{1}{2}$ inch at the margins. The lid completely covered the top of the keg and the slightly projecting contents; it was prevented from slipping sideways by means of two broad rectangular marginal notches which fitted about the lugs. On the outside centre of the lid rough incisions in form somewhat like H suggest an identification mark.

The bottom of the barrel was also carved from solid wood, a circular base surrounded by a wooden rampart or flange, the top margin of which was bevelled away to a fine edge. The lower edge of the body of the keg stood within the flange of the base, and the bottom was attached by thongs of leather or hide, of which a few fragments remained, and which passed through holes in the flange and corresponding holes in the body of the keg (Pl. III). Round the bottom margin of the keg itself were two series of such holes, roughly $1\frac{1}{4}$ and $\frac{5}{8}$ inch from the edge, the presence of which I shall explain later. The arrangement of the bottom of the keg was similar to that figured in the paper describing the Morvern butter-keg, discovered in Glen Gell, Argyllshire, in 1879, and indeed the two kegs were very similar in general appearance (see *Proc. Soc. Ant. Scot.*, 1882, vol. xvi, p. 220).

It is noticeable that the holes in the wood have not been drilled, but have been burned through sometimes with a round, sometimes with a rectangular implement.

THE "BUTTER" MASS.

When the keg was freshly taken from the bog and its contents were removed, they were of a bleached white colour and of a cheesy consistency, cutting easily and cleanly with a knife. At this time the butter mass seemed to be saturated with water, for whenever a smooth cut surface was exposed, beads of moisture collected thickly upon it. On drying, the mass lost almost entirely its soft cheesy texture, became hard and firm with a tendency to become powdery on the surface when rubbed, and had something of the soapy feeling of talc. Its smell reminded one of rancid butter or sour milk, and it tasted like rancid butter, with a slightly acrid flavour succeeded by a persistent feeling of "acidity" after it had been swallowed. The dry weight of the mass was about 35 lbs.

The mass was cut through the centre in a vertical direction to discover whether it showed any internal structure. From an examination of the

fresh surfaces thus exposed I concluded that the material had not been run into the keg in a liquid or semi-liquid form, for there were no indications of successive level layers, such as would have been present had melted fat been run in from the top. On the other hand, irregular lines of translucent spots throughout the material, the directions of slight cracks and the seeming junctions of different masses, suggest that the keg had been filled by the successive addition of rather small quantities of the material, each of which was firmly packed against the earlier contents. That is to say, the packing suggests the storage of butter rather than of melted body-fat or tallow. Microscopic examination revealed that while the mass was generally amorphous, there were areas in which inclusions of small translucent yellow spheres seemed to indicate a state approaching that of the original material, and other areas near the surface where crystallization in the form of flattened scaly crystals had taken place (Pl. IV, 2).

Through the services of Messrs. Ogston and Tennant of Aberdeen I received a chemical analysis of the "butter" made in the research laboratory of Messrs. Leverhulme. The report is as follows: "We have examined the sample of fat which was sent by Professor J. Ritchie and find that it consists of a mixture of 55.4 per cent. fatty matter and 44.3 per cent. material which was volatile at 100° C. The characteristics of the fatty matter separated from the fat by extraction with methyl ether are as follows:—

Iodine value	17.8
Acid value	183.8
Saponification value	203.4
Melting-point	43.7° C.
Titre of fatty acids	45.5° C.
Oxy-acids per cent.	1.73
Reichert-Meissl value (soluble volatile fatty acid)	0.5
Polenske value (insoluble volatile fatty acid)	0.7
Mineral matter per cent.	0.027

"It was concluded from the above figures that the fatty portion consisted of approximately 90 per cent. free fatty acids and 10 per cent. esters, probably glycerides. The fatty material, apart from its high content of free fatty acids, is evidently very different from butter fat. First, its iodine value is low and its melting-point high, and secondly, there is only the smallest indication of volatile acids as shown by the small Reichert-Meissl and Polenske values.

"According to calculations made from the saponification equivalent and the iodine value, it would appear that the acids are made up of about one-third C_{16} acids and two-thirds C_{18} acids.

"The analytical evidence therefore gives no indication that the origin of the material was butter fat. It is possible, however, that during the

course of many years, decomposition may have proceeded to such an extent that the lower molecular weight acids which are characteristic of butter fat have become removed as water-soluble and/or volatile constituents and the unsaturated acids have been oxidised and changed partly into saturated acids. If this were the case the present composition of the fat as judged by iodine value and saponification value would permit of it having been formed from butter fat. At the same time it must be remembered that tallow might, in the course of storage, give rise to a fat of similar composition.

"In connection with the gradual transformation of fat on long storage, it is perhaps worth while mentioning that a sample of fat removed from a vase in one of the Egyptian tombs was found by us to consist almost entirely of palmitic acid.

"Examination of the fat sample, as received, does not give any definite evidence regarding the origin of the material. The fat and the water are well emulsified and are not readily separated by heating. The aqueous portion after separation of the fat by methyl ether extraction shows only a small acidity corresponding to not more than 0.02 per cent. butyric acid and contains 0.26 per cent. non-fatty solids, both figures being expressed on the fat emulsion. The aqueous portion contains no salt and the amount of mineral matter present in it is extremely small. It is concluded, therefore, that the data which we have been able to obtain on the aqueous portion of the material is not sufficient to throw any definite light upon the origin of the fat."

Since this analysis left undecided the nature of the material placed in the keg, a further test was made by Dr D. J. Bell, then in the Biochemistry Department of the University of Aberdeen. He reports: "We have done amino-nitrogen estimations on the 'bog-butter' and find the content to be 3.6 per cent. of total weight (as NH_3). The material does not give the tests for protein, but contains traces of ammonium salts. The nitrogen probably originates in infiltrated material from the bog.

"As regards the origin of the material: the virtual absence of NH_2N does not, of course, preclude the initial presence of cheesy matter, as the protein may have been removed by the action of ferments in the marsh-water.

"The large preponderance of high fatty acids (C_{16} and C_{18}) would, on the face of things, at once point to somatic fat and not milk fat as the origin of the material, although one must always consider the occurrence of the synthesis of long chains from short ones, under the conditions of storage."

It is clear from these analyses that whatever the substance may have been which was placed in the keg, it has now no longer the characteristics of either butter or animal fat. Time and perhaps the peculiar peaty

surroundings have brought about extensive chemical changes which have destroyed its original nature. Two explanations of these have been suggested. W. Ivison Macadam in 1882 (p. 222) suggested that "the preservation of the butter might be accounted for by considering that, when first buried, the material would tend to pass into the lactic fermentation, being aided by the casein of milk, succinic and lactic acids being formed, after which the fermentation would yield a proportion of butyric acid. When this process had proceeded a certain length the casein would be rendered insoluble by the free acid present, when the action would cease, the butter remaining for an indefinite period without further change."

On the other hand, P. S. Arup in 1932 (p. 301), in describing two buried masses from Co. Leitrim and Co. Tyrone, the analyses of which closely resemble that of the Kilmaluag material, attributed some of the changes to the chemical effects of the action of living organisms—bacteria and moulds. "Fat hydrolysis in butter may be accomplished by two distinct groups of organisms, *i.e.* moulds belonging to the *Oidium*, *Penicillium* or *Cladosporium* orders, or by certain water bacteria, notably *B. fluorescens liquefaciens* or *B. prodigiosus*. The moulds consume part of the free fatty acids thus produced, notably the lower members, while the bacteria are eventually destroyed by the acids they liberate." He attributes the disappearance of soluble fatty acids to the fat-hydrolysing bacteria and the solvent action of percolating water; the insoluble volatile acids, which were solid and powdery, to the oxidation of the unsaturated acids; and the low iodine values to chemical oxidation of the unsaturated fatty acids, as apart from the action of micro-organisms.

A distinction between butter and animal or body fat lies in the high content of soluble volatile fatty acid in the former, Reichert-Meissl value 25.0, as against 0.8 in animal fat. But such content would dissolve out in material immersed for centuries in watery surroundings, so that the low present value (represented by the Reichert-Meissl value of 0.5) might equally well represent the end product in butter or animal fat.

Indeed, although Macadam (1882, pp. 212 *et seq.*) describes differences between bog-butter and animal fat (adipocere), chemical analyses seem to give no certain clue as to whether we are dealing with an altered butter or an altered body fat.

Since the results of the chemical analyses were indecisive about the original nature of the fat, further examination of the material was made for any indication of its origin. Several fibres contained in the substance were extracted and examined. Some of these were indeterminate vegetable fibres, the rest were mammalian hairs, and since these might be significant they were examined in detail.

VARIETIES OF HAIR FOUND IN BOG-BUTTER.

In addition to the hairs obtained in the material described in this paper, hairs were examined from two other masses of a similar nature

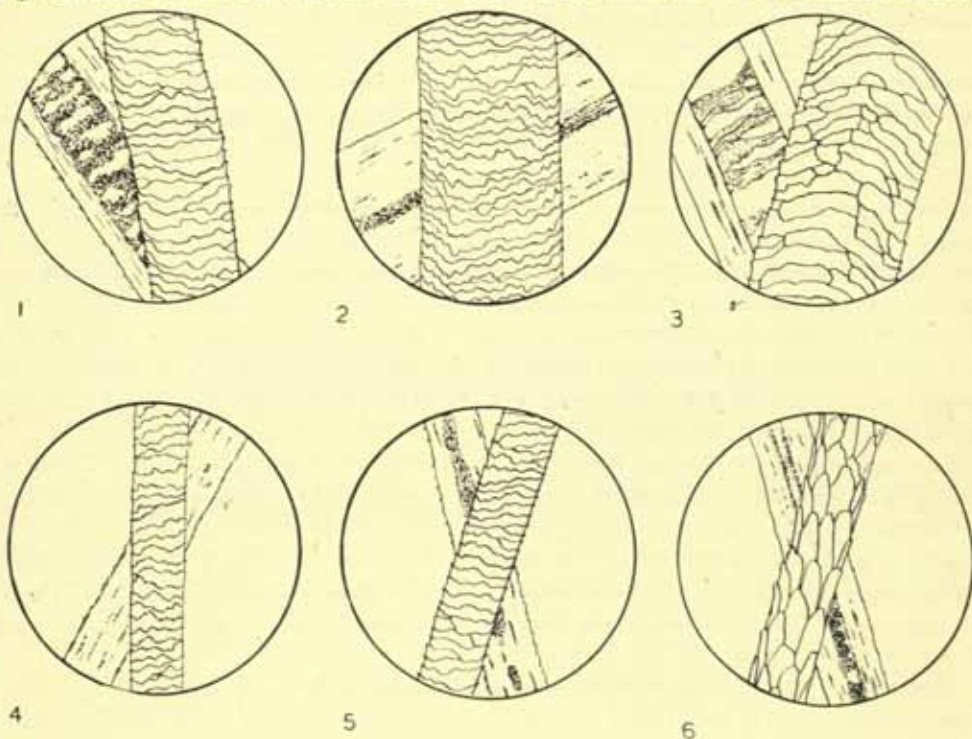


Fig. 1. Varieties of Hair from Bog-Butter. In each figure the upper drawing shows the cuticular scale pattern on the surface, the lower drawing the appearance in median optical section.

1. Cattle hair, strongly medullated, Kilmaluag, Portree, Skye.
2. Cattle hair, with small medulla, Plockton, Loch Carron.
3. Horse hair, Kilmaluag, Skye.
4. Human hair, non-medullated and blond, Kilmaluag, Skye.
5. Human hair, partly medullated and auburn, Kilmaluag, Skye.
6. Dog hair, North Yell.

All the figures are magnified about 150 diameters, except 3, the magnification of which is about 250 diameters.

preserved in the National Museum of Antiquities, one found in a keg at Plockton, Loch Carron, in 1887 (ME. 174), the other a mass of "adipocere" from a bog in Ross-shire, 1849 (ME. 171), as well as from "butter" found in a large oval dish of wood buried in a moss at Cunnister, North Yell, Shetland, and purchased in 1888 (ME. 222). In each of these hairs were rare inclusions.

Of most frequent occurrence in the small collection were hairs of cattle,

present in each of the masses except that from North Yell. They represent two forms, both with large and fairly regular cuticular scales, having fine wavy scale margins (see fig. 1, 1 and 2). In one form, varying from 80 to 96 μ in diameter, the medulla was large (50 μ) and contained much pigment (fig. 1, 1), while in the other larger form with a diameter of 112 to 132 μ the medulla was narrow (20 to 24 μ) and strongly pigmented although pigment granules were also scattered in streaks throughout the cortex (fig. 1, 2). Both hairs must have been of a deep red colour, and comparison shows that the second type agrees in every way with a hair taken from the flank of a one-year-old Highland ox.

Next in frequency occur human hairs, which were present in the masses from Skye and North Yell. These are finer in texture, 32 to 52 μ in diameter, have broad cuticular scales, in one case finely toothed on the margin, and have the medulla absent (fig. 1, 4) or discontinuous (fig. 1, 5). Pigment granules are arranged in short longitudinal lines in the cortex and are present in the medulla. The medullated hair was auburn in colour, the other blond, and both types were present in the Skye sample; the North Yell hair was blond.

A single deeply coloured hair, 72 μ in diameter, from Kilmaluag, Portree, Skye (fig. 1, 3) has cuticular scales with smooth edges forming large rather rectangular cells, and a large medulla varying from a discontinuous cylinder, $\frac{1}{4}$ of the diameter of the hair shaft, near the tip, to a well-defined continuous cylinder, $\frac{1}{2}$ of the diameter of the shaft, at the base, and these are characteristic structures of horse's hair (see Lochte, 1938, p. 241, and fig. 91, *a* and *b*).

The only other animal represented in these collections is the dog. The surface pattern of a hair from North Yell is distinctive (fig. 1, 6). The scales are longer than broad and form an imbricated design. The hair itself is 54 μ in diameter, its well-marked medulla 8 μ ; it is typical of one of the several hair-patterns found in domestic dogs (see Lochte, 1938, p. 182, and figs.).

The examination of the hairs brings out some interesting points. I had been keeping in view the possibility that the fat might be somatic fat or tallow of sheep, such as was preserved in the Faroe Islands, or even of seals, since the latter was frequently stored for food and light in winter. The absence of wool fibres and the hair of seals rules out these possibilities.

The solitary hairs of dog and horse may be regarded as accidental inclusions, which suggest the domestic atmosphere of a farmyard, in keeping with the relics of blonde and auburn dairymaids.

On the other hand, hairs of cattle were present in three of the four samples which were examined, although in none were they common. Macadam records the presence of "cow hairs" in samples of bog-butter

which he analysed at different times: in three samples from different places in Scotland, including those from North Yell and Plockton (1889, p. 434), and in nine samples, of which two were Scottish, six Irish, and one from an unknown locality. Of the Irish samples two contained many cow hairs, and in the undetermined sample they were "abundant, partly coal black outside" (1882, pp. 206, 207). There is no indication that the hairs were specifically identified by Macadam, and Dr Joseph Anderson's "perceptible admixture of cow hairs" in a sample of bog-butter he examined from Kyleakin, Skye, was probably also a cursory determination (1885, p. 310).

Nevertheless our investigations bear out these identifications and we have Macadam's statement that the presence of cow-hairs is characteristic of bog-butter, as contrasted with adipocere or somatic fat from which hairs are absent (1882, p. 217). In the same place Macadam notes, as I also found, that the colour of these cow hairs was always red, and since comparison showed them to be identical in colour and structure with the coat of Highland cattle, it is likely that the cattle associated with bog-butter belonged to a primitive breed, related to the "kyloes."

Macadam suggests that the presence of the hairs is "most likely due to the milk having been churned in a skin," in which case they would bear no essential relationship to the material within the churn, but the greater probability is that they were chance inclusions made during milking, and that they, therefore, are direct indications that the material is a cow-product, probably butter.

Apart from such evidences, testimony and tradition in Ireland and other countries lend their weight in favour of the presumption that the material originally buried was butter.

CONSIDERATIONS BEARING UPON THE AGE OF THE SKYE BUTTER-KEG.

A find of bog-butter in Ireland carries the date of the custom there down to the eighteenth century (see p. 5), and to a late period when the kegs were made of staves, according to a statement referred to by Macadam (1882, p. 219). But how far back the custom extended in Ireland is uncertain and, as I have mentioned, there are no records to indicate when it was in force in Scotland.

Three lines of enquiry may throw light upon the date of the Skye bog-butter or any similar discovery: (1) the keg itself, and particularly its material and handiwork; (2) its position in the layers of the peat-bog; and (3) associated relics or analogy with similar finds with which relics were associated.

To follow these lines of enquiry: (1) *The Keg*.—This is remarkable in construction, the bottom being a separate structure within the rampart-like

rim of which the lower edge of the keg was placed, and then the two were laced together with thongs of hide. No nail of copper or iron and no peg of wood was used. Yet obviously the keg was fashioned by an edged tool of metal, and the holes were burned out by metal rods. The latter is a slow process and suggests that the craftsman had no satisfactory drilling tool of metal. Skilful, therefore, though the craftsmanship of the keg undoubtedly is, it is of a simple and primitive nature, and reveals a lack of appliances and facilities, all of which point to its creation at a fairly remote period.

(2) *Relation to Layers of Peat-Bog.*—The Skye bog-butter under consideration was found at a depth of approximately 6 feet from the old surface of the peat, and the greater number of Scottish discoveries have occurred at what must be regarded as a considerable depth from the surface. For example, the Morvern keg from Argyllshire was found $4\frac{1}{2}$ feet below the surface (Macadam, 1882, p. 221); the Farr, Sutherland, mass of butter, encased in wicker-work at 3 feet (p. 223); the oval wooden vessel from Cunnister, North Yell, at 3 feet (Macadam, 1889, p. 433); the Keith mass in a bark case at 15 feet (p. 433); the Plockton, Loch Carron, keg at 4 feet (p. 434); the Kyleakin, Skye, keg at $7\frac{1}{2}$ feet (Anderson, 1885, p. 311). It must be assumed that these are minimum depths, for peat-cutting is an ancient industry, and some of the surfaces from which these measurements were made may have been denuded of several feet of deposit in earlier times.

Further, if we are right in thinking that the butter-kegs were not buried in a hole dug for the purpose in the peat, but were lowered into a peat-pool (see p. 7), and Macalister also refers to "the practice of sinking butter in bog-holes" (1928, p. 192), then the important conclusion follows that the layers of peat directly above the keg must have been formed after the deposition of the keg itself. Clearly, then, the depth at which the kegs, in particular those from Kilmaluag and Kyleakin, both in Skye, were found indicates a long period of peat formation; but the rate of formation of peat differs so much with the climate, soil and exposure that depth alone gives no satisfactory answer to the time question.

During recent years Dr L. von Post, State Geologist of the Geological Survey of Sweden, has developed a method, adopted by his students and by workers in this and other countries, of analysing and recording the comparative numbers of pollen-grains which the microscope reveals in the deposits of peat-bogs. The numbers of pollen grains in any layer are taken to indicate the frequency of the trees to which they belonged in the neighbourhood of the bog during the period when the layer was forming. And a comparative study of successive layers may show differences in quantities of pollen which indicate that certain trees were increasing in number while others decreased. The value of the evidence thus gained

is that it shows changes of climate which must have been general over the whole country, and so enables the layers of a peat deposit in one district to be brought into relationship with those of a deposit elsewhere.

Mr Mackay, the discoverer of the Kilmaluag keg, kindly obtained for me two samples of the peat in which it was found, one taken from below the position of the keg and one from above. The former would presumably indicate the local conditions before the butter was placed in the bog, the latter would show the conditions a short time after the deposition.

These samples have been analysed by Dr Ian M. Robertson, formerly of the Macaulay Institute for Soil Research and now a member of the staff of the Edinburgh and East of Scotland College of Agriculture. The sample from below the butter-keg was a *sphagnum*-heather peat, partially decomposed, the index of humifaction in von Post's notation being H_{6-7} , where H_1 is undecomposed peat and H_{10} is very highly decomposed. Pollen grains were present in the following proportions, roughly indicated as percentages of the total:—

Birch (<i>Betula</i>)	72
Alder (<i>Alnus</i>)	16
Hazel (<i>Corylus</i>)	10
Pine (<i>Pinus</i>)	9
Oak (<i>Quercus</i>)	3

Heather was abundant, and grasses were represented, as also were the shells of the fresh-water protozoon, *Amphitrema*.

The sample taken from above the keg was a *grass peat*, very little decomposed, the index of humifaction being H_4 . Its pollen grains were in the proportions:—

Birch	66
Alder	16
Pine	13
Hazel	8
Oak	5

Grass, rushes, and heather were all very abundant, and the fresh-water protozoa, *Amphitrema*, *Assulina*, and *Arcella* were present. The results of the analyses are shown graphically in fig. 2. What deductions may be drawn from them?

In the first place, the keg was embedded in peat layers which reveal that when they were formed woods or thickets were growing in the neighbourhood in which birch was the dominant tree, accompanied by a small proportion of alder, hazel, and pine and a sprinkling of oak, although the small amount of pine pollen may have been transported a great distance

by wind. No tree of any kind grows near the place now, and Mr Mackay tells me that no trees have existed there in the memory of the oldest inhabitant. Moreover, such a type of vegetation is scarcely represented in Skye at the present day.

In the second place, although there is no significant difference in the pollen frequencies of the various trees in the layers above and below the

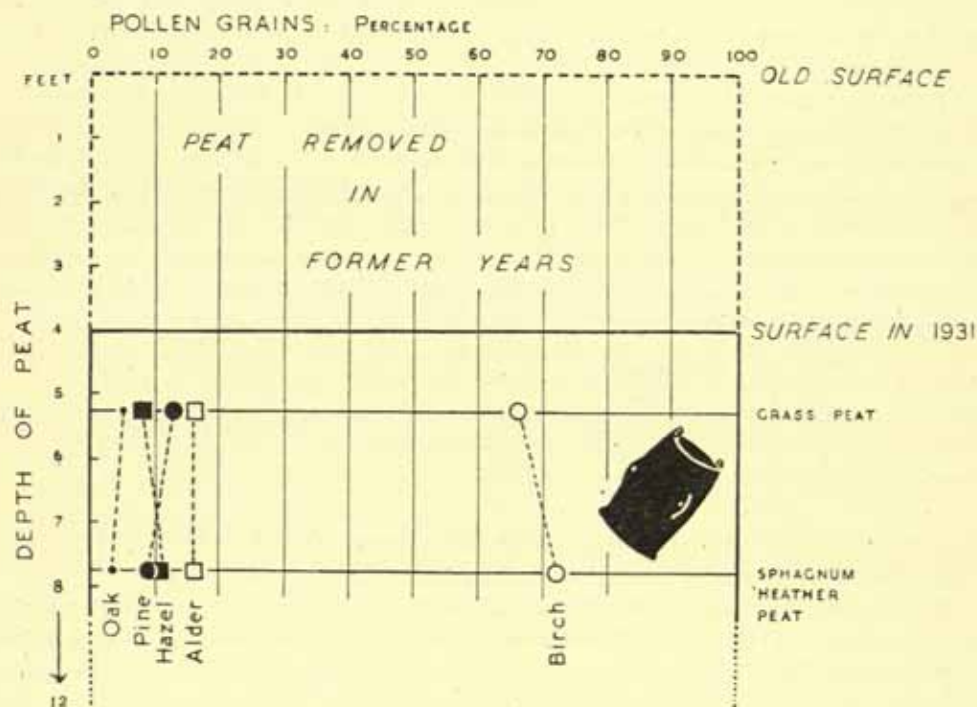


Fig. 2. Diagram illustrating the position of the keg in relation to recent and former surface of peat deposit, and pollen-grain content of peat below and above the keg.

keg, there is a significant difference between the layers. Thus the bottom sample is a *sphagnum*-heather moss rather more than semi-decayed, while the upper sample is a slightly decayed grass peat, which resembles closely the present undecomposed grass peats so common in the islands. The difference indicates a considerably more recent deposition of the upper layer.

In the third place, alder invaded the islands, according to the evidence of pollen grains, at a period much later than it appeared on the Scottish mainland, as is shown by a comparison of the pollen diagrams in Erdtman's paper dealing with Scottish mainland peat deposits (1928, pp. 170 *et seq.*) and in his paper dealing with the Scottish Isles (1924, pp. 465 *et seq.*). He

says in the latter (p. 494) that "in Sjaelland and Sweden the first alder-pollen appears in late boreal strata (about 6000 years B.C.), and it probably is the same in Scotland," that is on the mainland. The indication is, therefore, that, generally speaking, the appearance of alder on the Scottish islands was considerably later than that date, and, further, that its presence on Skye, where in the few deposits investigated alder pollen makes a characteristic sudden and late appearance (Erdtman, 1924, p. 467), marked a still more recent period.

Now in the layer *below* the keg alder pollen has attained a place only second to birch in frequency, and therefore we must assume that long before the burial of the keg the tree was already well established; and, as we have shown, the upper layer is considerably later than the lower one.

Finally, the grouping of the pollen-grain percentages of the different trees in our samples falls into line with that in the higher strata of the peat-bog N.W. of Portree investigated by Erdtman (1924, p. 467), and although the resemblance is not conclusive, it suggests an origin not earlier than late sub-boreal or early sub-Atlantic times.

The pollen analysis of the peat cannot give a definite answer regarding the age of this keg, but the cumulative evidence, of the accretion of five or six feet of peat and of the presence and the particular character of woodland in the neighbourhood of a place now treeless, of the keg itself carved from a substantial birch-tree more than 15 inches in diameter (although the possibility that the wood was not native but was imported for the purpose must be kept in mind ¹), points to a period more remote than the sixteenth or seventeenth centuries, to which such finds have usually been attributed, and suggests rather some time in the early historical or late prehistoric periods.

The above discussion is based upon the supposition that the peat found immediately above the butter-keg was formed after the keg had been lowered into a bog-pool. The position of the keg when found supports this supposition, but there are two other possibilities either of which would make the reading of the pollen content in the upper layer valueless as a time indicator. The first is that the keg may have been buried in a hole dug in the solid peat for its reception. This, I think, is unlikely because an essential for the exclusion of air is close contact throughout between the keg and its surroundings. Such contact would be perfect in a water-filled bog-hole, it would be almost impossible in a hole dug in solid peat. If a simple method of placing in a bog-hole could attain the necessary result, is it likely that the laborious method of burying and resurrecting from a pit would be used?

¹ This possibility seems to me to be somewhat remote, for the discovery in Scotland of other butter masses wrapped in skin and in constructions of wicker-work suggests that a birch trunk need not have been used and would not have been used unless it was easily obtained.

The second possibility is that the keg, having been placed in a bog-hole, sank into deeper and older layers of the peat. Against this possibility must be reckoned the fact that the owner intended to recover his keg, which, as I shall show, was of great value to him; and on that account he would avoid a soft peat-hag where he might lose it, and would select a pool on the firm bottom of which the keg could rest in comparative stability.

It may be noted that either of these possibilities would probably leave recognisable traces in the peat immediately above the keg, where the layers instead of being continuous with the surrounding layers, as in the case of deposition in a bog-hole, would be broken and disturbed. Observation of such disturbances could only be made on the spot and at the time of discovery, and in the present case the finder is emphatic that there was no appearance of former disturbance, and in his opinion the peat grew after the keg was deposited.

(3) *Indication of Age from Archaeological Associations.*—It is unfortunate that the discoveries of bog-butter in Scotland have generally been recorded with little information about their associations in the peat, and that in only one case is there a record of a contemporaneous relic which might give a clue to the date of burial. That also is a Skye record. Along with several kegs or small barrels of butter found under a depth of about $7\frac{1}{2}$ feet of peat in a moss at Kyleakin, Skye (Pl. IV, 1), there was present and said to be in close juxtaposition a bronze cauldron, semi-globular in form, 18 inches in diameter and 12 inches high (J. Anderson, 1885, p. 311, fig. 1). Its date is unknown, but Dr. Anderson regarded it as having several points of correspondence with two similar cauldrons found about 1837 on sub-soil below peat near Cockburnspath, Berwickshire. These contained a miscellaneous collection of iron implements and bronze objects, including the bowl of a Roman patella, and the nature of the collection made it evident to Dr. Anderson that it belonged to "a time subsequent to the Christian era, and probably after the period of the Roman colonisation of the south of Scotland." The indication of the worn, dilapidated and much-patched cauldron is that it was older than the collection of tools it contained. If it corresponds with the Kyleakin specimen, and if this was contemporaneous with the butter-kegs, then they must be attributed to the early centuries of the Christian era. But Dr. Anderson's description of one of the Kyleakin butter-kegs suggests that it is less primitive than the Kilmaluag specimen, for in the former the top and bottom were "inserted in ledges prepared to receive them," whereas in the latter the bottom was a rough external piece laced on to the keg by thongs.

I have examined the Kyleakin keg, which is preserved in the National Museum of Antiquities (ME 167), and am indebted to the Director, Mr. A. J. H. Edwards, for the photograph here reproduced (Pl. IV, 1). While at the lower end as shown in the photograph, a piece of wood was

apparently inserted and held in place by internal ledges in the wall of the keg,¹ at the other end a stout rim, formed by a deep external incision round the wall, indicates that this end was closed by a covering of skin or hide tied in position, and not by a wooden structure as Dr. Anderson suggested. The Kyleakin keg possessed side lugs carved from the solid wood of the body of the keg and perforated by circular burned holes, as in the Kilmaluag specimen, and the appearance and smell of the butter content of the two are similar.

The Kilmaluag keg may therefore be still earlier than that from Kyleakin, and this dating, about the opening of the Christian era, is in general agreement with the evidence from the peat deposit.

Although no definite age has been assigned to the earlier examples of bog-butter from Ireland, the recent tendency there has been to regard the practice as of far greater antiquity than was at first supposed. And Mr. L. S. Gógan, of the National Museum of Ireland, relying upon pyrographic decorations on the containing vessels, determines some of them as dating approximately from the eleventh to fourteenth centuries (see f.n. in Arup, 1932, p. 300).

THE USE OF THE BUTTER-KEG.

The keg itself bears evidence of the value in which it was held by its owners. It has been treated with great care, a possession which, in spite of the long periods of immersion to which it was subjected, had to be conserved for use over and over again. This keg had been used in the bog on previous occasions, for the drying of its saturated timber, while it was in the house after an earlier resurrection from the bog, had caused shrinkage and the development of a huge crack from the top rim. Too precious to be rejected on this account, the keg was repaired by the lashing together of the split wood by means of hide thongs passing through holes burned in the timber (see Pl. I, 2).

A second accident happened to it on this or another occasion, for, again while it was in the house, mice had gnawed through the wooden wall to reach the butter, leaving the marks of their incisor-teeth upon the sides of the hole. The hole, nearly three inches long by an inch broad, would have allowed the butter to escape when next the keg was filled. The owner therefore carved a thin oval slip of wood, $4\frac{3}{4}$ inches long by $1\frac{1}{2}$ inches broad, which was slipped over the hole on the inside of the keg while the butter was being packed, so that, without other support, the butter held it in place (see Pl. III, H). It fell away from this position when I removed the butter.

Finally, evidence of repeated use is given by two series of holes around

¹ The wooden hoop shown securing this end is not part of the original structure but, like the bands of wire, has been added to keep the keg in shape.

the base of the keg for the attachment of the separate bottom-piece. These are of two distinct sizes, bored by different tools, are at different levels, and some are so close together that they could not have been used on the same occasion. The indications are that the keg was used until the first bottom became so dilapidated that it had to be replaced by a new one, through the rampart of which and the base of the keg holes were bored simultaneously.

Of the history of the butter-keg and its contents after its disposal in the peat-hole nothing is known, but a shrewd conjecture may be made. It is unlikely that the owner of so treasured a possession, or his family, would forget the spot where it lay and whence he meant to retrieve it. It may have sunk beyond his ability to recover it, but he must have considered and done his best to avoid that possibility when he selected the site. The chances are that the vagaries of war or of tribal feud left it ownerless, to be eventually overgrown and imbedded in the accumulation of peat, until after many centuries a modern peat-cutter revealed again its resting-place.

The Skye keg from Kilmaluag here described has been given by me to the Regional Museum of the Town Council of Aberdeen.

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II

AN ACCOUNT OF THE PARTIAL EXCAVATION OF A "WAG" OR GALLERIED BUILDING AT FORSE, IN THE PARISH OF LATHERON, CAITHNESS. BY ALEXANDER O. CURLE, C.V.O., LL.D., F.S.A.Scot., F.S.A.

Read January 25, 1941.

In the hill country forming the southern part of the parish of Latheron, and chiefly in the region where a series of narrow watersheds separate the numerous burns hurrying down to the sea, there lie a number of peculiar constructions whose period and purpose have hitherto remained undetermined.

Seeing that in a number of instances the term "wag," either alone as "The Wag," or in combination as "Wagmore" and "Wagmore Rigg," has become the place-name of their sites, it is evident that such was their original designation, though the application of the term to the structures themselves has long fallen into disuse. In the *Inventory of the Royal Commission on Ancient Monuments (Caithness)* they were designated "Galleried Dwellings," by reason of a distinctive feature of their construction and a misinterpretation of the purpose for which they were intended. The buildings were either oblong with rounded ends or circular, but, in either case, there ran around the interior a covered gallery, some 3 feet wide, open to the interior, except for the interposition of pillars some 5 to 6 feet distant from one another which supported the roof of the gallery. For the most part they are situated comparatively near the burns, and sometimes, as in the case of two groups near the foot of Morven, in very remote situations.

As will be demonstrated later on, these structures were in reality folds for cattle, sheep, or other stock. Their distribution evidently extended into the adjacent region of the County of Sutherland,¹ and it is probable that excavation conducted on certain structural remains in the parish of Reay² would reveal the ruins of others in that neighbourhood. It has been suggested³ that the term "Wag" has been derived from the diminutive of the Gaelic word *Uamh*=a cave, *uamheg*=a little cave, owing to the cave-like appearance of the structures when complete, but, from the details now revealed, this does not seem a very satisfactory explanation, unless its application had been, in the first instance, to the variety which was entirely roofed in, as afterwards described.

¹ *Report and Inventory, Royal Commission on Ancient and Historical Monuments (Sutherland)* No. 475.

² *Ibid. (Caithness)*, Nos. 389-394.

³ *Proc. Soc. Ant. Scot.*, vol. xlv. p. 89.

Immediately to the west of Forse House there lies a tract of rough pasture land, partly grass, partly heather, where the lower slopes of Ben-a-Chielt fade into the plain. An old road, known as "The Crash," bounds it on the east. This tract of moorland is remarkable for the diverse remains of ancient structures that lie scattered over its surface. Towards the north end a low conical grassy hillock, on which the sheep graze, conceals the ruins of a broch: a quarter of a mile or so seaward of it, two upright pillars of stone, amidst a debris of boulders, indicate the remains of a chambered cairn, carried away within living memory for road metal: hut-circles and lesser cairns mingle with the ruins of crofts; while ancient walls, and the billowy ridges left by former cultivation, chequer the surface over a considerable area. Yet, though this wealth of evidence shows that people had made their homes over many centuries on this pleasant slope, the name they knew it by is known no longer. It appears to be nameless.

Near the centre of the east side, just where the ground commences to rise, there is a low hillock whose surface is, or was, covered with a mass of huge stones scattered about in utter confusion, except for the occasional occurrence of an upright slab which thrust its head above the ruins, or of a short section of walling which happened to be exposed. When I visited this site in 1910, I recognised it as a group of wags, the largest complex of such structures that I had come across, and, at the same time, the most accessible for excavation, if ever an opportunity should occur to investigate an example.

Being in Caithness in 1937 and 1938, excavating the site of a Viking settlement at Freswick, I was in a position to make my preparations to explore the Forse wag when I had completed my Freswick adventure, which I did in the latter year. Accordingly, having obtained the consent of the proprietor, Captain Baird, and of H.M. Office of Works to excavate a scheduled monument, I got together a staff of four workmen, with Mr Samuel Bremner, our Corresponding Member, as foreman, and commenced work early in June 1939. It was a formidable task, for the ruins, which consisted for the most part of huge slabs of stone, weighing many hundred-weight, covered an area of approximately 120 feet by 90 feet. No spade work was necessary, for no soil had accumulated on the top to give footing to any extent to grass or heather, and, until we reached floor level, the work consisted entirely in the handling of heavy stones. As I desired to ascertain the details of construction as well as the plans, the stones were not removed until they had been carefully considered as to their form and size, and the positions in which they lay.

On a superficial examination the ruin appeared to consist of a long chamber on the western side, lying approximately N.N.W. and S.S.E., with the entrance from the latter direction, and two similar chambers,

contiguous, on the eastern side, with an indeterminate mass of ruins occupying the space between the eastmost pair and that first mentioned, the whole contained within an encircling wall, reduced in parts almost to foundation level. This wall, which coalesced with the westmost building, passed clear behind, and thence proceeded round to the front

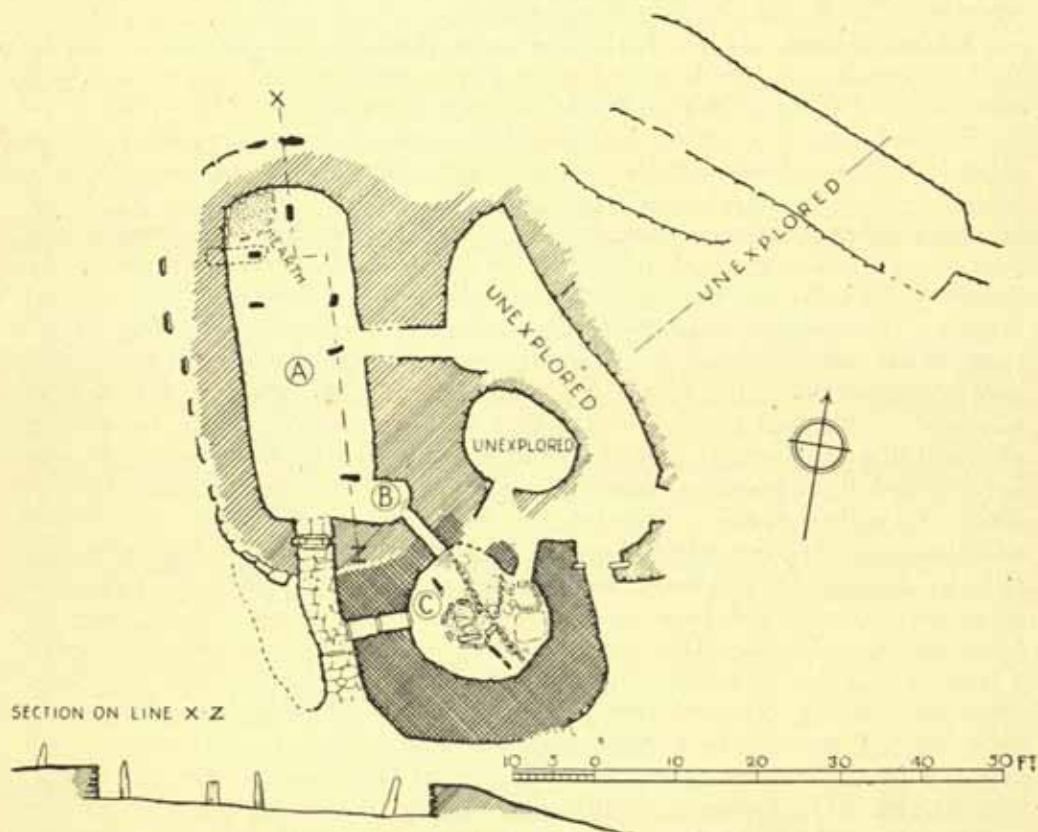


Fig. 1. Plan and section of excavated structures.

of the complex, making contact again at the west end. It has, however, yet to be explored and laid down on a plan (fig. 1).

Work was commenced on the westmost structure, starting from the entrance at its southern extremity.¹ It proved to be a building measuring interiorly 41 feet 9 inches in length, by 15 feet in breadth, an oblong on plan, with rounded corners, and rounded at the inner end. The wall, though somewhat irregular, had an average width of 6 feet, and a height of from 4 to 5 feet on the inside where still erect. The masonry was

¹ For simplification in description, the approximate cardinal points of the compass are used where divergence is slight.

exceptionally good, and resembled, in its massive character, the stone work of a broch. The stones were not dressed, but were just as they came out of a quarry nearby. Many of them, forming the outer edge, where it remained, measured from 4 to 5 feet in length, and nearly a foot in depth, while those on the inner face measured from 2 to 3 feet, and even more, in length, by 8 inches in depth.

The stone used was Old Red Sandstone, obtained from an outcrop at the foot of the rising ground immediately to the north of the hillock on which the wag was situated, where it was exposed in more or less loose flags.

The external face of the wall had been almost entirely removed on the west. It was reduced on the north, where the natural surface was at a higher level, to its base, which consisted of a line of large stones (Pl. V, 1). It was evident that at this end the ground, in forming the interior, had been excavated to a depth of from 2 to 3 feet, and also that to serve any purpose of exclusion, the original wall, rising, as it did, from the natural level on the outside, must have been of considerable height. The south-east corner was occupied by a small chamber, rounded at the back, and recessed into the wall, to be described later. The entrance was not in the centre, but had been placed a foot or two nearer to the west side of the building, and was 4 feet 9 inches in width at its inner end. It was approached by a passage, paved throughout its length, originally 10 feet long, but subsequently extended by an additional 11 feet when other additions, to be described hereafter, were constructed. The doorway (Pl. V, 2) had been placed within the passage, 2 feet back from the entrance into the building, and on either side there had stood posts to form checks. That on the east side—of stone—still remained, measuring 4 feet or thereby in height, but the pillar on the opposite wall had been removed, leaving exposed the recess which it had occupied. The space between the portals had been about 3 feet wide. In advance of the position of the door a triangular sill crossed the passage, apex upwards, to a height of 10 inches. As this sill was above the original level of the passage, it evidently belonged to the later period in its history. On the inner side of the jambs was another slab, laid on edge, and evidently buttressed with two blocks to keep it in position and resist the pressure from a heavy door which must have stood against it. There were no bar holes, but, on the left or west side of the actual entrance, the corner-stone on the lowest course, before the wall turns from the passage to the interior of the chamber, was an L-shaped block, laid in such a way that the re-entrant angle was exposed in the face of the wall (Pl. VI, 1). It is suggested that this may have been used as a socket for one end of a wooden stay, the other end of which was thrust into the angle between the closed door and the wall on the opposite side of the passage, so as to keep the door closed.

At the commencement of the excavation a huge slab, measuring 4 feet 10 inches by 3 feet by 8 inches, and reckoned to weigh from 15 cwt. to a ton (Pl. VI, 2), lay obliquely within the doorway, and had evidently been a lintel. As it was impossible to clear the interior so long as this stone remained where it had fallen, it was removed to the outside.

To the right of the entrance (B on plan) was the small chamber recessed in the wall in the corner, referred to above (Pl. VII, 1). It measured 5 feet 6 inches in breadth across the opening, and 4 feet 6 inches in depth.

On the south side of the entrance to this cell, *i.e.* directly opposite the corner of the north to south wall of the main building, a recess had been formed, measuring 12 inches by 15 inches by 5 inches deep, by hammering off the corner of a stone immediately above the bottom course (Pl. VII, 2). It is extremely difficult to conjecture for what purpose this recess was intended, but it may have been formed in connection with a wooden partition to screen off this cell from the main building, with a doorway through it. Towards one side of the back wall an opening, measuring 2 feet wide by 2 feet 9 inches in height, gave access to a lintelled passage, 6 feet 8 inches long, with two of the lintels still *in situ* (Pl. XI, 2) leading into the circular chamber C on plan. Within the passage and paving the floor, lay a broken saddle quern. On the left of the entrance to it there had been a peat fire, the ashes of which had spread into the passage itself. A few flat stones, laid across the opening of this cell and the surface of an outcropping rock, formed a partial pavement.

The floor of the long building, or wag (A on plan), consisted of a bed of yellow clay, some 3 to 4 inches in depth, very hard and dry, and im-mixed with small fragments of stone which seemed to be natural, but reference to the surface of the rock in the adjacent outcrop would verify or disprove this assumption. In the interior (Pl. VIII, 1), ranged along either side and the inner end, there had been erected a series of upright slabs, some 5 feet in height, placed at a distance of 2 feet or thereby from the wall face, and from 4 to 5 feet from each other (fig. 1). Six of these stones remained *in situ*, though one, that at the south-east end, had been tilted to some extent, and that nearest the inner end, on the east side, had been reduced to half its height. These stones, as a rule, had not been bedded in the clay floor (Pl. VIII, 2), but had been merely placed on a slight mound composed of the floor-clay, with, in a few instances, one or more flat stones inserted beneath to form a wedge as required, and afford greater stability. It was evidently intended that they should be maintained in position by the superincumbent weight of heavy lintels, which they carried, reaching from the top of the existing wall-head. Of these only one remained *in situ*, but it may be accepted as a typical example, there having been numerous similar flags lying among the debris. The massive character of this cap-stone can be gauged from the

illustration (Pl. IX, 1). It measured some 6 feet in length, and rested on the existing wall-head to the extent of 1 foot, and projected to about the same distance beyond the pillar. It did not lie horizontally, but with a slight decline towards its base on the wall. Covering the space between the adjacent lintels there had originally been cross lintels. There was thus formed around the interior a covered corridor. None of the cross lintels remained *in situ*, but one may be seen in position in a wag at Houstrey of Dunbeath, a few miles inland from Forse.

Near the centre of the east wall there had been a doorway into a passage 4 feet wide, which led into a complex of buildings not yet explored. This doorway had been built up, and the passage behind it blocked. As one of the pillar stones stood directly in front of the doorway, it is obvious that the passage was lintelled at the height of the existing wall-head, the lintel affording support to the roof of the corridor in front of it.

In the north-west corner of the wag a fire-place (Pl. IX, 1) had been constructed. Against the base of the wall stood a row of flat elliptical boulders to act as a fire-back, and there were indications of a built front. The area enclosed measured some 2 feet 4 inches by 2 feet 1 inch, and had been paved. As much charcoal remained on the surface adjacent to the hearth, it was evident that the fuel employed had been entirely wood, while the extent to which many of the stones had been reddened, and fractured by fire, indicated that a great heat must have been generated. Nowhere else in either of the chambers excavated, was there any sign of the use of wood as fuel instead of peat, yet the level of the bottom of this fire-place, relative to the floor in which it was sunk, militated against any possibility that it could have been secondary. There was an absence of charcoal on the actual burnt stones on the surface of the hearth, but, beneath, the soil was black and greasy. A shallow narrow channel between two paving stones in front of the hearth may have been a surface drain—a possible arrangement, in view of the fact that the fire-place had probably not been covered with a roof.

The relics found on the floor of the wag were meagre in the extreme, and consisted merely of a few small fragments of coarse pot. There was also only very slight discoloration of the surface of the floor, in marked contrast to the usual condition of prehistoric floors, all of which goes to show that human habitation was not the purpose of the wag. In the clay floor there were occasional small specks of carbonised material, such as might have come from some vegetable bedding with which it had been covered.

As previously mentioned, the entrance passage, from an original length of 10 feet, had been extended for a farther distance of 11 feet, and, while the original passage was straight, this addition made a slight inclination towards the east. There were no remains of a gate, or doorway, at the

outer extremity, and, in view of the fact that it widened out towards the end, it is doubtful if one ever existed at that point. At 7 feet inwards, however, there obviously had been a door, as a sill and door jambs, on either side, were still *in situ*. Inward from this position some 1 foot 9 inches, and on the right or east side, there was an entrance to a side passage giving access to the circular dwelling (C on plan, Pl. IX, 2). This passage measured 2 feet 4 inches in width and 8 feet in length. Where it left the main passage it was crossed by a sill, but there were no indications of a door having existed at that point. At 3 feet 10 inches farther inwards there was a second sill with an elevation of 1 foot 2 inches at the centre. Here there had obviously been a door, probably of wood, for on the north side there was a semicircular hole, 5 inches across, cut out of the edge of a paving slab to form one side of a socket, 6 inches deep, as if to hold a wooden post, while on the opposite side there was a rectangular recess for a stone check.¹ At the inner end the passage was again crossed by a sill, in this case only 4 inches high.

When the dwelling (C) to which this passage gives access was abandoned, as related hereafter, the passage had been filled in, after the lintels which roofed it had been removed, while at the same time the main passage into the wag (A) was also raised to a higher level with flat stones, carefully laid, an alteration which obviously corresponded with the change in level at the inner doorway.

The dwelling (C) was roughly circular, with a diameter varying from 14 to 17 feet, and was contained within a wall varying from 7 to 10 feet in thickness. From the character and the size of the stones that filled the interior (mostly flat stones, some 14 inches in length, and 3 to 4 inches in thickness), as well as from the manner in which they lay overlapping one another, it was apparent that the dwelling had been covered with a beehive roof. There was a complete absence of the pillar and lintel style of roofing displayed in A. One upright, a tall pillar stone measuring 6 feet in height from floor level, was standing, placed a few feet to the left, or north, of the entrance, and only 18 inches away from the wall face (Pl. X, 1). Presumably it has been employed, with the addition of packing stones, to support a weak part of the roof. The style of construction of the wall differed from that employed in the long building. The stones used were not so massive, nor were they so well laid, and there was much use made of thin fragments, or spawls, between the larger blocks, as in broch-building—a feature less noticeable in the walls of the long chamber. It is evident that on the north there had been a collapse of the wall, which no doubt brought down the roof, and caused the dwelling to be abandoned.

¹ The door would probably be a primitive construction of wood, such as may still be met with in Shetland, in which the door, built in one piece with one of the posts, revolves with it in stone sockets at top and bottom respectively.

At one time a second entrance into the house from the north had been in use, but details of this can only be forthcoming after further exploration. The small passage which connected the cell B with this building opened into it at a point some 7 feet to the north of the main entrance, measuring 1 foot 8 inches by 1 foot 6 inches at its entrance, which opened at a height of 2 feet 7 inches above the actual floor level (Plate X, 2). At the back of the wall, only 2 feet beneath it, lay a gutter-shaped stone on which a peat fire had burned, and which itself lay on peat ash. As there was evidence of reconstruction and extension in the main passage into the long building A, so, also, there was an indication of alteration and extension in the side walls of this passage.

On the floor of the dwelling C, placed a few feet nearer the south side than the north, there was a circular hearth (Pl. XI, 1), measuring 5 feet 6 inches in diameter, rising to a height of 8 inches above the floor level, and outlined with small flat-sided stones set on end to form a kerb, except towards the east, where two heavier stones projecting some 8 inches above the surface formed a fire-back. The surface of the hearth was paved, except in front of the fire-back, where there was a deep bed of peat ash. Crossing the floor of the dwelling from the east side of the fire-back to the wall were two upright stones, placed in line in the floor and obviously intended to divide the interior of the chamber into two definite areas of occupation. The area between the partitioning stones and the entrance was unpaved, and black and greasy on the surface. The corresponding area on the north was carefully drained, dry and clean. From a point just to the right of the end of the narrow passage from A a drain ran in an easterly direction, passing by the edge of the hearth towards the main wall of the building, through which it was carried, debouching on sloping ground outside. From the north wall, just to the left of the unexplored passage, a branch drain ran to connect with the other at the hearth, and, in combination, they passed across the floor and through beneath the wall. Where the combined drain gave on the sloping ground beyond, clumps of rashes growing there showed how effectively it had functioned during the many centuries since its formation. The section coming from the direction of B measured 6 inches across by 5 inches in depth, and was formed with sloping sides of stone and covering slabs, and a flat unpaved bottom, while the other was merely a channel scooped out in the clay, 4 inches deep and 7 inches across, and furnished with occasional stones at the side to support the single covering slabs with which it also was provided. The main drain, so to speak, was formed with sides built up with flat stones, and was covered with a double layer of flags. It measured 11 inches in breadth by 7 inches in depth.

This northern half of the hut had evidently been particularly reserved for human occupation. Not only was it thoroughly drained to render it

habitable, but a large flat stone, measuring some 3 feet 9 inches square, had been laid on the floor in the angle between the face of the wall and the main drain and appears in the background of Pl. XI, 1, while immediately to the north of it there was an area of similar dimension, slightly hollowed out and unpaved, but covered with small particles of carbonised matter which did not seem to have been produced by burning as there was no indication of a fire on the spot (see also Pl. XI, 1). It is probable, therefore, that on this dry area the inmates lived, and that the carbonised matter was the remains of heather, or of some other vegetable substance used for bedding.

The house had obviously collapsed during the period of its occupation, for on the peat ash covering the hearth lay the remains of a cooking-pot which had been crushed by the fallen stones of the roof (Pl. XII, 1), and beside it was an angular fragment of stone, reddened by fire, probably the cooking-stone used within it.

Numerous other cooking-stones came from the floor in the vicinity, with three complete stone pot-lids and one-half of another, while a fourth was found in the passage.

Within this dwelling, in the course of excavation at a depth of 3 to 4 feet, measured from the top of the tall monolith, we found numerous pieces of grey compacted clay immixed with charcoal which appeared to have been from a secondary floor, and, at the same level, there was found, close by the tall upright, a polished sandstone disc, thin, slightly concave on one surface, and measuring $3\frac{1}{2}$ inches in diameter. Similar discs were found in the broch of Skirza and in the Road broch at Keiss in Caithness, as well as at Traprain Law and various other Iron Age sites. A rim section of a very small vessel of black pottery of globular form, with an everted rim, was found on the same level. At about 8 inches above the floor level an unfinished whorl was picked up. Almost on the actual floor, four segments that went to complete a rudely fashioned jet ring, with a diameter of $2\frac{1}{2}$ inches, a couple of oblong pounders or hammerstones, and a rim segment of a cooking-pot, with a series of finger-tip impressions beneath the rim (Pl. XII, 2), were found. The last-mentioned came from the peat ash on the hearth within C at the end of the passage from the cell B.

Alterations in the plan as above-mentioned show three periods in the history of the wag (A). The first when it existed with a comparatively short entrance passage, and before the construction of the dwelling C. The second when the passage was extended, and C with the branch passage into it were formed; and the third after the collapse and abandonment of C, and the levelling up of the main entrance passage.

When the excavation of the foregoing buildings had been completed there did not remain sufficient time to explore completely any further

portion of the complex before the day arrived for my departure from Caithness, so I set my workmen to follow out various walls, portions of which emerged from the ruins, with the results laid down on the interim plan. This revealed the existence of a number of enclosures, including one oblong building resembling "A," and others of indeterminate character. Besides these, there were more connected ruins farther east, which were neither explored nor planned. These probably include yet another oblong wag.

In the course of tracing these walls the following objects were found, viz.: a quartz pebble which had been used as a pounder, much abraded at one end, and measuring $5\frac{1}{4}$ inches in diameter lengthways; a heavy hammerstone, $8\frac{1}{2}$ inches long; and a saddle quern, 1 foot 6 inches in length by 12 inches in breadth.

So far, the relics recovered have been few in number, but they were all such as might have been found in a broch, including the potsherds, and it is noteworthy that only saddle querns have been, so far, found, which, in the absence of any of the rotary type, would indicate an early period in the history of the brochs if the building was contemporary. Inasmuch, however, as only a small portion of the structure has been explored, it is too early yet to form any conclusions from these relics as to the date. It must be borne in mind also that most of them came from the dwelling (C) which was secondary to the actual wag.

It has already been stated that in the long chamber (A) there was no indication of its use as a dwelling, while, in the circular building adjoining (C), the facts disclosed clearly pointed to an opposite conclusion. What, then, was the purpose for which A, and the other wags, oblong or circular, were erected?

If we refer to Pennant's *Tour*¹ we shall find that such buildings had not escaped the notice of earlier antiquaries, and that a description and explanation of them had been supplied to Pennant by the Rev. Mr Pope of Reay, with a plan, which, in light of modern exploration, can safely be regarded as inaccurate. To quote from the *Tour*, these buildings were "*styled forest or hunting houses, for they are supposed to have been used by the antient inhabitants for retreats in the hunting countries. They consist of a gallery, with a number of small rooms on the sides, each formed of three large stones, viz. one on each side, and a third by way of covering. These are made with the vast flags this country is famous for. At the extremity is a larger apartment of an oval figure, probably the quarters of the chieftain. The passage or gallery is without a roof: a proof that they were only temporary habitations. The length is from 50 to 60 feet. These buildings are only in places where the great flags are plentiful. In Glen Loth are three, and are called by the country*

¹ *A Tour in Scotland, MDCCLXXII, Part II. Additions to the Tour, p. 18.*



1. North end: figure on natural level.



2. Doorway: looking outwards.

ALEXANDER O. CURLE.

[To face page 32.



1. West wall of passage, showing socket.



2. Fallen lintel in doorway.

ALEXANDER O. CURLE.



1. Small chamber B: passage entrance at X.



2. South Wall of C: recess at foot-rule.



1. View of interior of wag.



2. Pillar slab resting on floor.

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1. Pillar with capstone *in situ*: Fireplace beyond.



2. Entrance passage to dwelling.



1. Pillar stone beside entrance to dwelling.



2. Entrance from small passage in wall of dwelling.

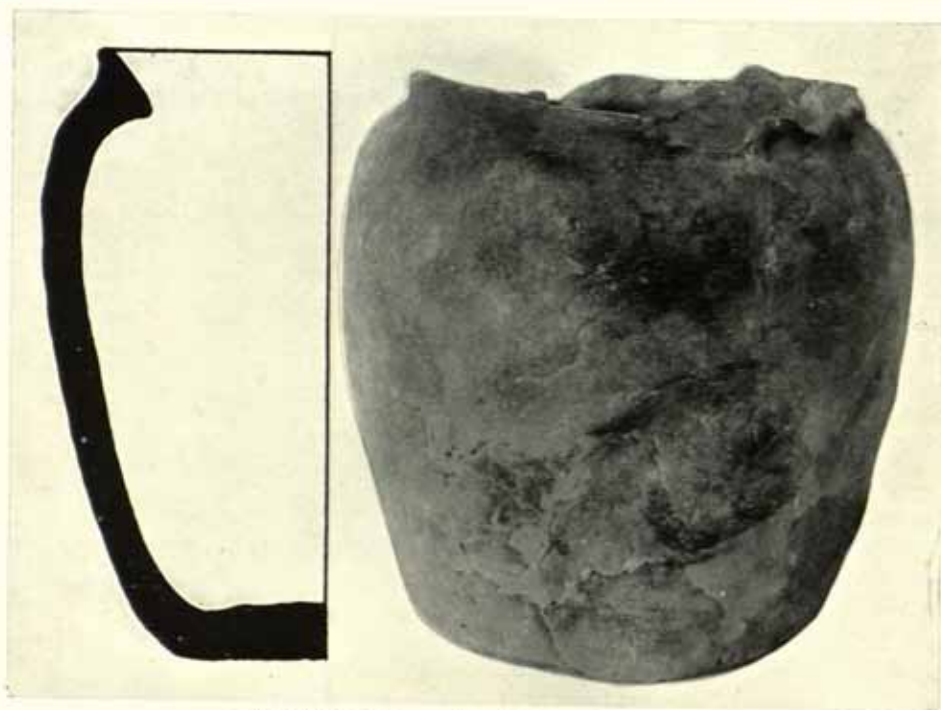
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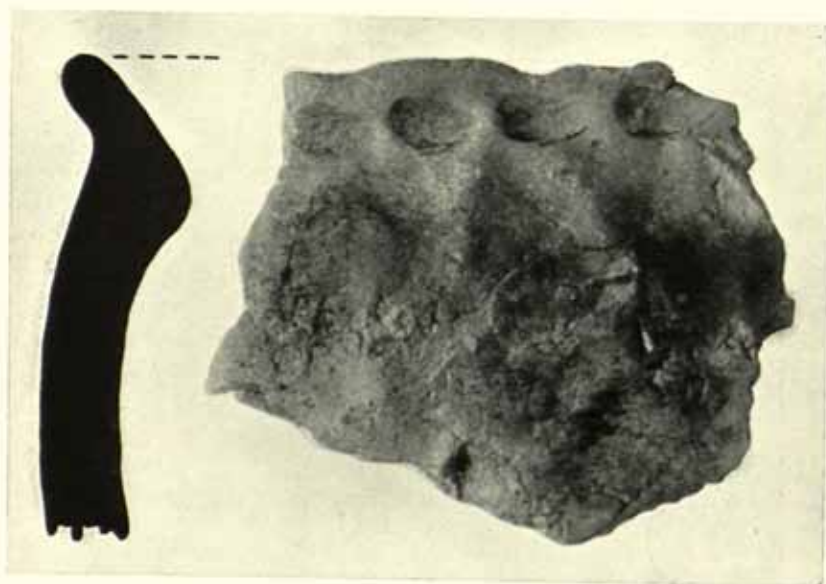
1. Interior of dwelling: showing hearth.



2. Passage from chamber B to dwelling C.



1. Cooking pot (reconstructed) found on hearth.



2. Rim of cooking pot with fingertip impressions.

people Wags." The inference drawn from the locality of these structures, viz. that they were connected with hunting, was not unnatural, but in respect of the frequency of their distribution, and of certain features of their construction, it is quite untenable.

There can now be little doubt that they were the folds, and byres or cattle pens, into which the stock was driven every night for protection from the wolves¹ and foxes, with which the hill country was infested in those times, and possibly also from bears, and in this connection it is interesting to note² that in Caithness, as late as the commencement of the nineteenth century, it remained the general practice to house cattle at night, both in summer and winter, while a similar course was followed in the case of sheep by the country tenantry, one reason being to preserve the latter from the attacks of foxes and dogs. Thus an explanation of the wood fire, uncovered by a roof, in the north-west corner of the wag may have been to furnish a glow in order to scare away any wandering beasts of prey.

The farm stock of the broch occupants, as ascertainable from the bones found in their kitchen-middens in Caithness, consisted of oxen, sheep, goats, swine, and horses. From the earliest period in broch occupancy, measures must have been taken for the preservation of the food supply, which also, in patriarchal fashion, at that period formed the wealth of the community. Among the outbuildings of many brochs, no doubt, suitable accommodation was provided, but as outbuildings are not found around all brochs, this was not universally the case. Where outbuildings were lacking which might have been applied to such a purpose, folds and cattle shelters may have existed at a distance from the broch, perhaps in close proximity to pasture. Fortunately for the elucidation of our problem, a group of typical wags, built outside a broch, were exposed, and planned, in 1866-67 by Dr Joseph Anderson, and a consideration of the features then discovered tends to bear out the foregoing conclusions as to their purpose. The particular broch was that known as the Broch of Yarrows, situated adjacent to the loch of that name.

Outside the broch, and built against it, were two long, irregularly shaped enclosures (C and D on plan, fig. 2) and several small cells. The outer enclosure (D) was 100 feet in length, and varied in width from 6 feet to 20 feet; the inner enclosure was some 70 feet in length, and about 12 feet in width, and each had a little cell, provided with door checks, opening off it. In some places the walls of these enclosures remained entire to the height of 10 feet. Both of them had irregular rows of long slabs set

¹ For very full information as to the former existence of wolves in Great Britain and Ireland in historic times, see Hasting's *British Animals extinct within Historical Times*, published in 1880.

² Henderson's *Agricultural Survey of the County of Caithness*, 1812, p. 210.

on end in their floors. The secondary character of all these exterior constructions was obvious from the fact that underneath the foundations there was a considerable depth of stones overlying the original soil and

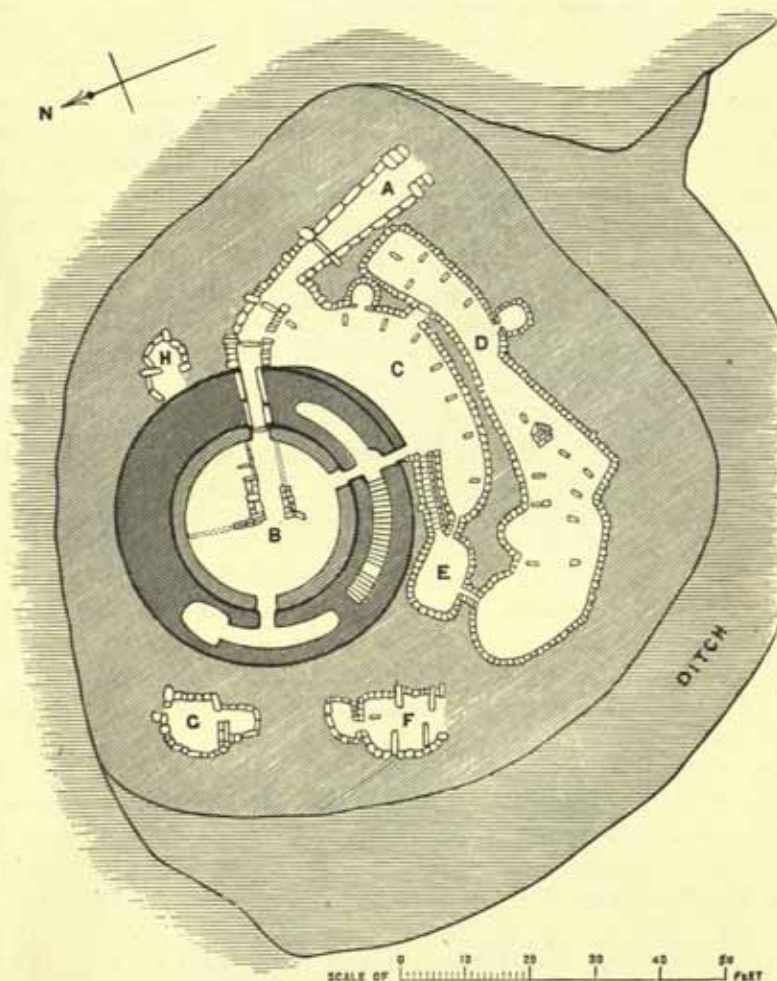


Fig. 2. Broch of Yarrows, after Anderson.

intermingled with ashes and food refuse. It is obvious, therefore, from the plan and description—for the buildings are now ruined and the pillars overturned—that against the wall of the broch there had been constructed, at a date subsequent to that of its original occupation, a group of typical wags. A close examination of the plan throws considerable light on the practice followed. There had evidently been three separate folds—C, which was the largest, and undivided, and D, which

was probably divided into two by a fence, or gate, where the salient angle near the centre of the south wall has constricted the interior to some 4 feet, an arrangement difficult to explain, except on the assumption of some such division. The entrance into C, as shown on the plan, is 4 feet wide. A row of pillars was carried all along in front of the south wall, and, though, when the excavations were carried out, there were none on the opposite side, the fact that the outer face of the broch had been furnished with an apparent scarcement on this section, suitable to support the ends of the lintels, justifies the presumption that originally they had also stood there. Near the entrance, a small cell, measuring some 4 feet in depth, and furnished with checks for a door, had been constructed in the wall. At the opposite end was a larger chamber, E, similarly constructed, measuring some 12 feet by 7, and approached by a passage, 12 feet long, roofed with flags, and only some 2 feet wide. From this chamber a narrow slit had been formed, connecting with the inner end of C.

If the arrangements in this wag (C and E) are compared with those in the wag explored at Forse, certain marked resemblances will be observed. The entrance, presuming it to have been in its original state when excavated by Dr Anderson, was approximately of the same dimensions: the greatest width of the chamber was some 12 feet, and the space between opposing pillars must have been approximately 6 feet. If, as elsewhere, the lintels projected 1 foot beyond each pillar, the central space would be reduced to 4 feet. Had it been desired to roof this space, the breadth of the building would have been diminished instead of expanded by curving the south wall outwards. We may presume, therefore, that, as at Forse, the central space between the lateral galleries was open. The chamber E corresponded, to some extent, with chamber B of the Forse plan, but whereas at Yarrows this chamber was separated from the wag by 12 feet of covered passage, at Forse, apparently there had been interposed a partition, or screen. The slit resembles the similar narrow passage connecting B with the circular dwelling C at Forse and would serve the same purpose. We know that the outer wall of the wag at Forse must have been of considerable height, and to exclude wolves, which could easily have mounted a rough-built wall of any lower height, it must have been at least 10 or 12 feet high. The width of the entrance indicates that it was for the housing of cattle. We may thus assume that this was a typical cattle-wag with a high outer wall, which would obviate the necessity of entirely covering over the interior, sufficient protection from the weather being afforded by the roofing over the surrounding gallery. That being so, we may then regard this Yarrows wag, C, as a cattle enclosure. In that case, the small chamber, E, was for the cattle herds, the entrance being sufficiently narrow to prevent the ingress of

cattle. The narrow passage or slit into the wag was probably fashioned to enable the herds to hear if there was any disturbance among the animals, either caused by the entrance of thieves, or of wild beasts, or by an animal breaking loose, and so to take immediate action to counteract it, an inference borne out by the existence of a similar slit connecting E with the inner end of D. The narrow passage at Forse would be intended for a similar purpose, for, with a peat fire at either end, it was evidently not used for transit, though available for an escape if necessity arose. The small round cells near the entrances to C and D at Yarrows were obviously guard chambers to protect the doorways.

It has already been pointed out that the enclosure D had been divided into two parts at the point of constriction, just beyond the guard chamber. The greatest width between the pillars in the outer or eastern section is 3 feet 6 inches, and, if we allow 1 foot for the projection of each lintel beyond its supporting pillar, a very small space is left in the centre which could easily be covered by a roofing flag. We may assume, therefore, that this section of D was completely roofed over, unless an open space was left in front of the guard chamber.

In the western section Dr Anderson noted the presence of a built pier in the centre of the flooring, which is shown on the plan just beyond the first pillar. It will be observed that that pillar had been placed with its sides parallel to the walls and so contrary to the usual practice, as also is the pillar just beyond the pier. This arrangement of pier, and pillars, was obviously made to facilitate roofing with flags over a narrow space, the pier being capable of supporting lintels from the side walls as well as from the two adjacent pillars, such lintels, in their turn, being used to carry cross lintels. From this it is evident that the portion of this section to the east of the pier, on which no pillars were found, had not been roofed. There is no evidence now to show whether the inner extremity was roofed or not, but its greater width suggests that it was not. Nor is there any explanation of the rounded recess in the north wall, though it is conceivable that it may have been for a fire, such as existed in the north-west corner of the wag at Forse.

If the assumption is correct that enclosures with wide entrances, and roofed only along the sides, were for cattle, then those with narrow entrances, and entirely roofed over, were intended for the folding of sheep, or goats. It must be borne in mind that the cattle of those days were generally small, some of them exceptionally so, owing largely to the conditions under which they had to live,¹ and thus the comparatively short distance between the upright pillars, which would be insufficient for the accommodation of a modern ox, was, no doubt, sufficient for its prehistoric

¹ C. Bryner Jones, "Origin and Development of British Cattle," *Proceedings of the First Congress of Prehistoric and Protohistoric Sciences*, 1932, p. 151.

ancestor. To prevent the cattle goring one another, they were no doubt tethered at night.

The complete excavation of the wag at Forse will probably throw more light on the pastoral practices of the prehistoric occupants of the far north in the Iron Age. Information will no doubt also be obtained from the number and character of other human habitations discovered in the ruins as to whether the people who occupied them were in fact the owners of the flocks and herds, or merely shepherds and guardians.

While the situation of the Forse wag would permit its occupation throughout the year, that of the majority of the wags provokes the question whether in many cases they did not serve the purpose of summer shielings, furnishing accommodation when the animals were brought up to the hill country for the summer in order to graze on the hill pastures, a practice once almost universal, and which only fell into disuse in the outer islands in the nineteenth century. It seems very improbable that cattle and sheep were kept throughout the year on the slopes of Morven at an altitude over sea-level of from 750 to 1000 feet, where one finds remains of wags, as on the Wagmore Rigg. Such buildings seem unduly massive for mere summer shielings, but to serve their purpose they required to be lofty, and they were intended to be permanent. Except on some such supposition, it is difficult to understand the social conditions which would drive the human occupants of these wags to retire into such exile from their fellows. Such was not the practice in prehistoric times where, for the sake of mutual protection, men lived a somewhat gregarious existence in small communities. Also, when the land carried a smaller population, and there was a freer choice of desirable holdings, such communities were mostly settled in the river valleys, or in the fertile belt that fringed the shore. It is seldom that remains of human habitation are found in the remote recesses of the hills, except in the form of hut-circles, which were, no doubt, in many cases also of the nature of summer shielings. The frequent occurrence throughout Scotland of place-names combining either the term *airigh* in Gaelic, or "shiels" in Lowland Scots, shows how prevalent the practice was of periodic migrations, and also indicates that it was an indigenous practice, and not necessarily one introduced by the Norsemen, whose "saeter" life is better known at the present day.

There is another consideration on which future excavation may throw some light. What, if any, are the relations of these structures to the brochs? We have seen that at the broch by the Loch of Yarrows there is actually a complex of wags built against it. Though it was shown to be secondary when the broch was excavated, it was not demonstrated that the broch and the wag were not in contemporary occupation, and, in that regard, it is noteworthy that the Yarrows wag was not furnished

with a connected dwelling, as at Forse. There is a broch in the near vicinity of a wag at Langwell, and, as has been stated, there is one within a few hundred yards of that at Forse. The character of the relics from the Forse wag are suggestive of broch culture, while the style of building, especially the massive nature of the material employed, is certainly reminiscent of the brochs.

The excavation of the neighbouring broch at Forse might provide more positive evidence, but that is an undertaking not to be hoped for in the present times.

The wealth of the broch owners was in the form of flocks and herds, and we may assume from the dimensions of their "castles" that they were wealthy. Around a number of brochs there are undoubted cattle enclosures, and in the restricted compass of the interior court, which invariably affords space for a central hearth, there was no room for animals other than the domestic dog. But, around a considerable number of brochs, notably in the county of Sutherland, there are no cattle enclosures or evidence of associated out-buildings. It may also be stated in various cases where excavation has taken place, that such outside buildings have usually been considered secondary. It may have been the case, therefore, that the wags were the "farm steadings" of the broch owners where, nightly, in wolf-infested regions, their flocks and herds were housed. In other districts where such highly protective buildings could be dispensed with, the folds would be constructed in a less massive and permanent style.

Finally, a word as to a possible source from which these curious structures emanated. One cannot avoid the conclusion that there is some connection between these "wags" and the remarkable buildings in North and South Uist to which attention was first directed by Captain Thomas¹ and, subsequently, by Mr Erskine Beveridge.² Though these buildings in the west were obviously dwellings occurring by the seashore, and, in their actual masonry presenting no marked analogy, yet, in the internal arrangements, with surrounding corridors fashioned by upright slabs, or piers and lintels, as in the wag, the resemblance is striking. Nor must one lose sight of the fact that the ruins of a construction with certain of the characteristic features of a wag, the pillars and lintels forming a corridor around a circular chamber, are to be seen near the summit of the range of mountains which separates Loch Eriboll from the Kyle of Durness, at an elevation of nearly 1000 feet above sea-level, and were examined and reported on by Mr John Mathieson, F.R.S.E.,³ one of our Corresponding Members. Though the site is remote from the Western Isles, it is the only link so far known between the parish of Reay, where the remains of wags are believed also to exist, and the Islands.

¹ *Proc. Soc. Ant. Scot.*, vol. vii. p. 173.

² Erskine Beveridge, *North Uist*, p. 120.

³ *Proc. Soc. Ant. Scot.*, vol. lix. p. 221.

The system of roofing by the use of stone monoliths and lintels is also met with in certain earth-houses in the Orkney Islands.

In conclusion I must acknowledge my indebtedness to the Council of the Society for a grant from the Excavations Fund which enabled me to carry out the excavation; to Mr James S. Richardson, F.S.A.Scot., for redrawing my plan; to F. L. Robertson, Ph.D., of the County Library, Wick, for lending me his tent; and finally I would pay tribute to my team of workmen for labouring so cheerfully at a herculean task.

III.

THE WATER-SUPPLY OF THE ROMAN FORT AT LYNE.

By I. A. RICHMOND, M.A., F.S.A.Scot., F.S.A.

Read January 25, 1941.

The Roman fort at Lyne occupies one of the most striking naturally defensive positions in Scotland. Indeed, the fact that it has yielded first-century pottery¹ inevitably calls to mind the reputation which Agricola won by his eye for *opportunitates locorum*. The choice is certainly not unworthy of the great general (fig. 1). The Lyne Water, protecting two sides of the plateau on which the fort stands, runs in the bottom of a valley over 100 feet deep, formed by glacial melt-water. The plateau itself is formed of hard compacted gravel and is almost completely separated from the hills which flank the valley by a marshy trough containing a prominent moraine. Connection with higher ground is provided by a narrow neck of land (fig. 1) projecting from the north-west corner of the plateau. In many respects the position is not unlike that of Fendoch, which stands² upon an isolated glacial hummock at the head of a dry valley; and in one particular there must have been a very striking resemblance. Both sites lie high above the water-table in their valleys, and impossibly deep well-digging would be required to reach any good supply. Accordingly, it might be expected that at Lyne, as at Fendoch, water would be brought into the fort by an aqueduct or underground pipe-line, thereby ensuring a constant supply of the vital commodity.

The war-time archaeologist cannot dig in order to answer such a question, and in the peaceful valley of the Lyne Water no chance excavation, as for air-raid shelters, is likely to occur on the lonely plateau. But the fort was excavated by this Society in August 1901 (*Proceedings*, vol. xxxv. pp. 154-86), and the remains found were planned with the ability and precision so conspicuous in Scottish archaeological work of the period. It is clear to-day, however, that the excavators were not altogether

¹ Macdonald, *Proc. Class. Assoc.*, xxix. 16.

² *Proc. Soc. Ant. Scot.*, lxxiii. 112, fig. 1.

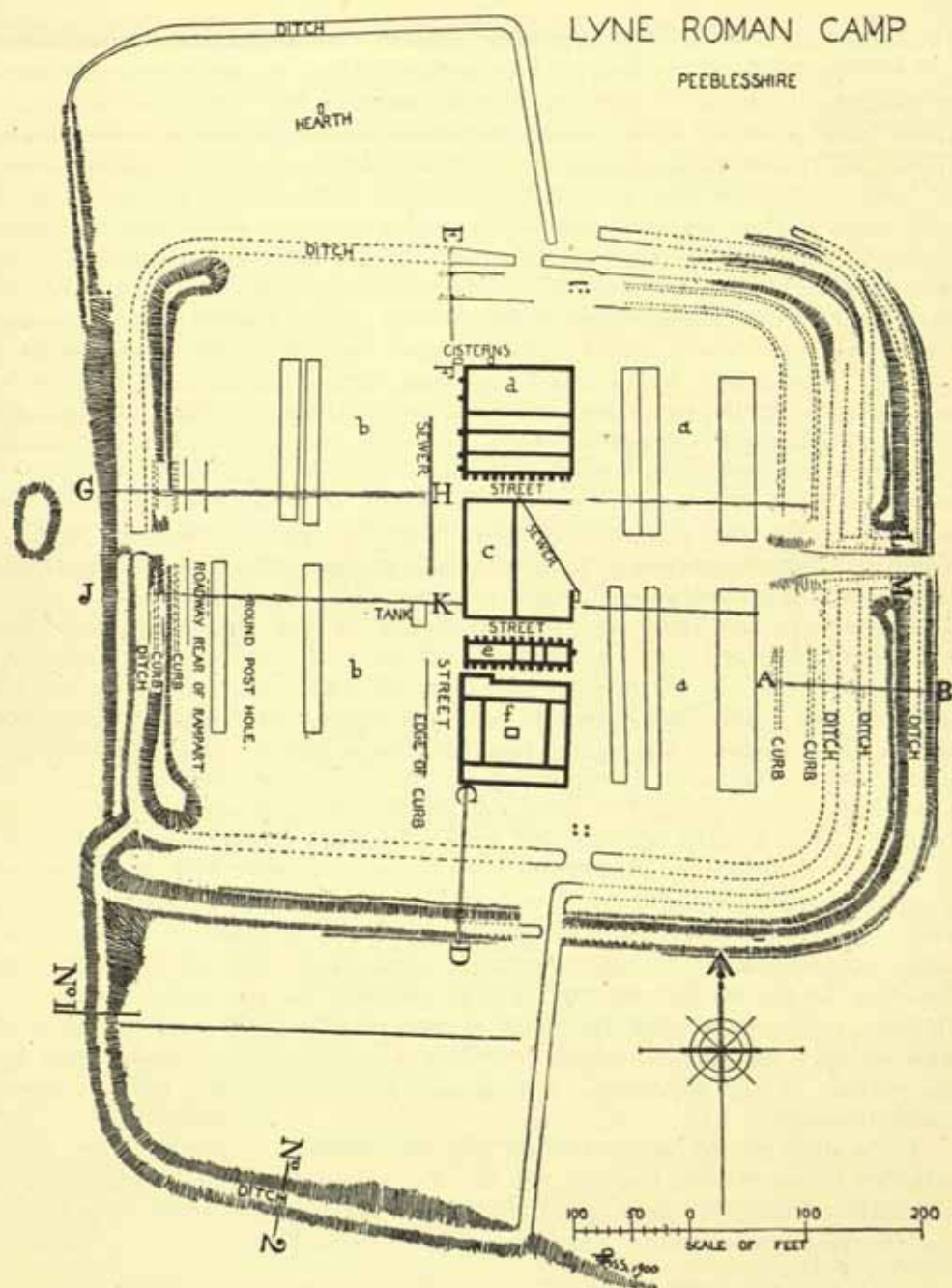


Fig. 2. Roman fort at Lyne, Peeblesshire. Plan of fort showing tanks, cisterns and sewers, explicable as part of the water-supply.

the excavators found (*op. cit.*, 179) that a "small drain or sewer, close below the surface, crossed the forecourt obliquely, discharging into a rectangular 'cess-pool,' just outside the wall, in the Via Principalis." A little later, another tank behind the headquarters building is mentioned (*ibid.*, 182), and its arrangement is described as "a sewer which seems to have discharged into a tank 20 feet long, 12 feet wide, and at least 10 feet deep, cut in the hard gravel, the sides of which stood like a wall of concrete, after the filling was removed." By way of comment it may be observed at once that there is an evident hesitation on the part of the excavators when describing the function of the system: their definition halts between "drain" and "sewer" and they take the precaution of placing "cess-pool" in inverted commas, as indicating that they were not altogether happy about their identifications. To-day, we should have no hesitation in saying that although latrine-trenches and soak-pits were not unknown¹ to the Roman military engineer in temporary work, no such pits would ever be associated with the main front of the *principia*. On the contrary, we can turn to High Rochester² and to Fendoch³ for water-tanks in exactly this position, the Fendoch example being cut in gravel subsoil with vertical sides once encased in timber. There need be no doubt that the parallel is in fact very exact, and that we are dealing with a water-tank at Lyne. But whereas at Fendoch the tanks were fed by wooden pipe-lines of which only the trenches remained, the Lyne feed-channels were of stone. One passed obliquely across the *principia*, aiming for the junction of the *via quintana* with the *intervallum*. The second, supplying the much larger tank, is seen to be a conduit passing along the west side of the *via quintana*. There can be no doubt that we are here dealing with a system exactly comparable with that at Corbridge⁴ or at Birrens,⁵ where an aqueduct fed a number of water-basins at ground-level, into which men could dip buckets as if at a well. One more point may be observed. Both these sets of drains and tanks are associated with the *retentura* of the fort, and are fed from the direction of its north-west end. It is precisely at this point where the plateau is connected with the main system of hills by the narrow neck of land already mentioned, which provides a natural bridge to be used by the makers of the pipe-line. Springs are available on the hillside about a mile distant.

It is difficult to say whether the arrangements of which we have detected traces within the fort are all of one period. That portion which is associated with the *principia* looks as if it were coeval with the building and therefore presumably Antonine: but we can be much less certain as

¹ *Arch. Journal*, lxxxix. 68.

² *Proc. Soc. Ant. Scot.*, lxxiii. 124.

³ *Proc. Soc. Ant. Scot.*, lxxii. 307.

⁴ *Northumberland County History*, xv. 94.

⁵ *Archæologia Æliana*, series 4, xv. 253-4.

to the tank and conduit in the *via quintana*. There can be little doubt that in the *retentura* and *praetentura*, where the excavators found only timber buildings, the Flavian buildings were touched. In particular it will be observed that in the south-east end of the fort the building nearest the Antonine rampart seems to be much too near it, as if it were contemporary rather with the Flavian rampart farther out. If, then, Flavian buildings were reached, so may also have been disclosed part of the Flavian water-system. For the problem of bringing water to the site was as urgent in one age as the other, and nature dictates that it must always have been brought by the same narrow neck of land into the *retentura*.

IV.

THE DEFENCES OF KAIMES HILL FORT, MIDLOTHIAN.

BY PROFESSOR V. G. CHILDE, F.S.A.Scot.

Read January 25, 1941.

As a condition of their consent to the destruction by quarrying of part of the scheduled monument at the west end of Kaimes Hill, the

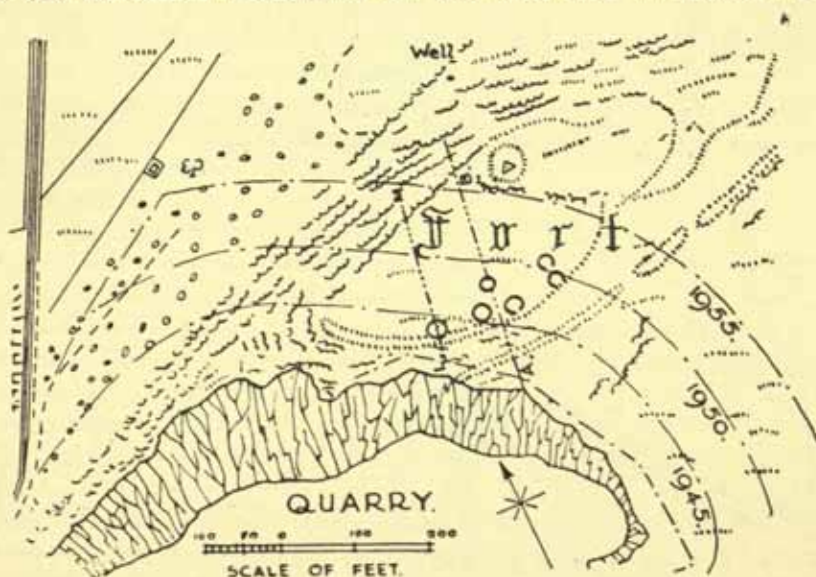


Fig. 1. West end of Kaimes Hill, showing areas scheduled for quarrying between 1940 and 1955, hut circles, and sections AB and LM.

Ancient Monuments Board stipulated that an archaeological examination of the threatened works should be carried out and that the quarry should provide labour for this operation. The Board invited me to supervise

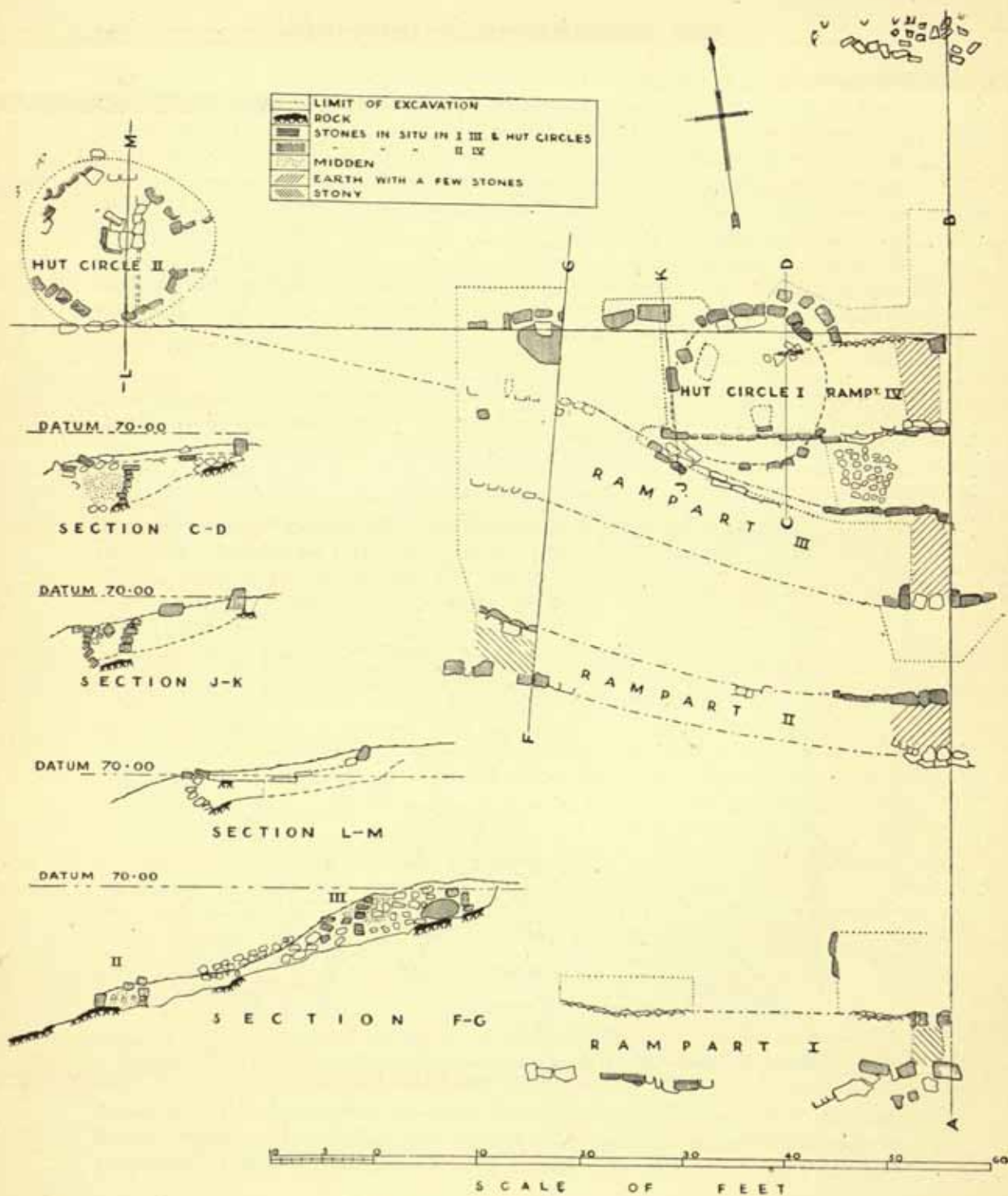


Fig. 2. Kaines Hill. Plan and sections.

this work, which was carried out in June and July 1940. Under war conditions operations had to be restricted to determining the structure of the ramparts in the threatened area and their relations to one another and to the hut-circles which occur on or close to the apparent crest of the inner rampart. Two sections were accordingly cut through the ramparts, and the two most conspicuous circles in the doomed zone were examined. The first section, AB, cut all ramparts along a line selected to pass through a grassy hollow just within the lower rampart that looked like a hut-site; it eventually led to the exposure of two hitherto unrecognised lines of defence—Ramparts II and IV. An enlargement westward established the relation between Rampart IV and a hut-circle (No. 1). Section FG was chosen because a strip of the outer face of Rampart II, poorly preserved in Section AB, showed through the turf. Actually, when joined to Section AB, it gave us the intersection of Ramparts III and IV. Finally Section LM was designed to elucidate the structure of the best preserved of the hut-circles scheduled for demolition in the next five years, but gave in addition the relation of this typical circle to Rampart III (fig. 1).

The south face of the hill, which was alone affected, slopes up northward at an average rate of 3 in 10 and consists almost entirely of the native trap-rock, often bare, in patches covered with thin turf. The inclination is not really smooth, but is interrupted by a series of natural steps and terraces of which the builders of Ramparts II and IV in particular took advantage. Nor do the contours run quite smoothly east and west. Section AB happened to follow a very shallow gully along which the contours bend back northward.

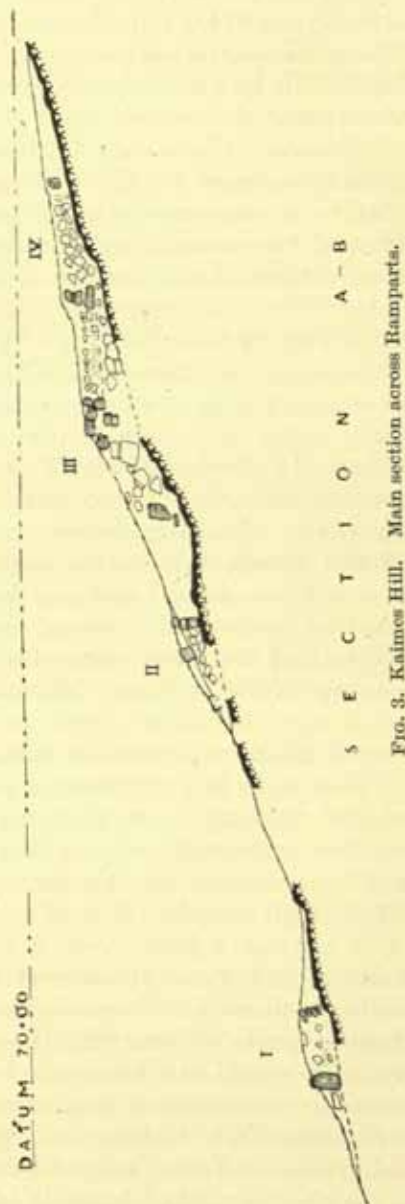


FIG. 3. Kaimes Hill. Main section across Ramparts.

When the hill is viewed in profile, Ramparts I and III conspicuously interrupt the smoothness of its curvature; Rampart II can be just discerned as a low hump east of Section AB (farther west it is masked by scree from III), but Rampart IV was not superficially visible anywhere. These ramparts represent at least two quite distinct defensive systems, but it will be convenient to number them in serial order, beginning with the lowest and outermost.

Rampart I is clearly visible all round the south and east of the hill and is duly marked on the O.S. maps as well as in the Royal Commission's plan¹; in our area its crest lies between 47 and 49 feet above our datum.² It was cut through by our Section AB, and its outer and inner margins were exposed for distances of 25 and 28 feet respectively west of AB. The outer "face" is formed of large blocks ($1\frac{3}{4}$ feet long \times $2\frac{1}{2}$ feet high \times 1 foot thick and $2\frac{1}{2}$ feet \times $2\frac{1}{2}$ feet \times $1\frac{3}{4}$ feet are typical dimensions) entirely devoid of any sort of dressing. These are generally set upright, but in places two blocks had been piled one on the top of the other (Pl. XIII) rather than built in courses (the stones in question measure respectively $2\frac{1}{2} \times 1 \times 1\frac{3}{4}$ feet and $1\frac{3}{4} \times 1 \times 1$ foot). The facing blocks do not usually rest on rock, and in no case could a prepared rock-cut bed be detected for them. Packing-stones or wedgers have been inserted under several of the facers, but many have fallen forward or slipped down the hill. Our section utilised the gap left by one such stone which was lying prostrate in front of the line of the face (fig. 2). An accumulation of blocks in front of the facers may be just due to such slipping and collapse, but may partly have been deliberately piled up to strengthen the face; the small upright stone, shown in front of the face in fig. 2, is thus planted very firmly on the rock as if it were meant to stand where it does.

This rude face retained a core of earth mixed with broken rock which seemed to have been piled up against it. To form an internal support for this core small stones had been packed against it, forming a "back face" devoid of any regularity of coursing but yet capable of standing 2 feet high on the line of section (Pl. XIII). The total width of the bank is thus a little over 6 feet. The bank can never have risen very much higher than at present and would hardly constitute a formidable military obstacle. It was most probably designed to support a palisade of stout posts driven into the rampart core. The sockets for such posts probably would not penetrate to the rock—indeed on the theory the whole point of the rampart was to avoid the quarrying of post-sockets. None were observed in the section. But the basalt exhibits a columnar structure, and grass-roots soon work down along its fracture-planes so that it would be possible to make plausible-looking post-holes even by hard brushing!

¹ *Inventory, Midlothian and West Lothian*, No. 216.

² An arbitrary base 114.8 feet below the hill summit's trig. station.

Rampart II appears a little east of AB, as an inconspicuous terrace or step below the crest of III and some 12 feet above Rampart I on the 59-foot contour (Pl. XX, just above end of staff). On line of section it was scarcely perceptible, and west thereof it is masked by the scree of stones fallen from Rampart III. Three stones in line projecting through the turf on the lower margin of this scree gave the position of its outer face where Section FG started (Pl. XIV); the blocks in question, dressed flat on the top and outer face, rest firmly on the rock and measure respectively $1\frac{1}{2} \times 1\frac{1}{4} \times 1$ foot, $1\frac{1}{2} \times 1\frac{1}{2} \times 1$ foot and $1\frac{3}{4} \times \frac{3}{4} \times 1\frac{3}{4}$ feet. AB was traversed by two lines of stones either of which might represent the outer face (fig. 2), but there are many loose stones both within and without these lines protruding through the thin turf or resting precariously upon the sloping rock.

In Section FG $5\frac{1}{2}$ feet in from the outer face a fine inner face to Rampart II was discovered (Pl. XV). It still stands over 2 feet high and consists of two courses of medium-sized stones (*e.g.* $1\frac{3}{4} \times \frac{3}{4} \times 1$ foot and $1\frac{1}{4} \times \frac{3}{4} \times 1\frac{1}{4}$ feet), while a third course was represented by a stone 4 feet long (visible behind the staff in Pl. XIV) where it had fallen back outwards from the line of the face. The rampart's core consisted here of stones and earth and may, like Rampart I, have supported a palisade. In fact in the section a triangular hole, only 6 inches deep, was actually found in the rock, which is here flat; the hole may be natural but would serve to take the base of a post. The inner face was exposed in Section AB too, and was followed westward for 12 feet. Here, too, the face was fairly well preserved with two or even three courses in position and using stones as much as 3 feet long.

Against the inner face of Rampart II there was an accumulation of black soil 1 to 2 feet deep, relatively free from stones, but, in Section AB, containing burnt animal bones. Larger stones that may have fallen from the top of Rampart II lay above this deposit. In neither section did stones which could be derived from Rampart III lie against the face of II, though the debris comes down to and over the probable line of the face.

Rampart IV must be described before III as its construction is clearer and its presence has to some extent modified the lay-out of the later rampart. Its front face stands in Section AB some 25 feet back from the inner margin of Rampart II upon a terrace of rock on the 63-64-foot contours. It was preserved to a height of $3\frac{1}{2}$ feet in places and was traced westward from AB for $28\frac{1}{2}$ feet, but the preserved height diminishes in this direction as the level of the rock terrace rises as if the top of IV had been levelled off. The face is mostly built with flat slabs having straight outer edges, nicely coursed throughout and standing with a batter of 1 in $3\frac{1}{4}$ (Pl. XVI; fig. 2, CD, JK). Wedging-stones have sometimes been inserted under

the foundation course in which large blocks are frequently used. These do not always stand on the rock, but often on what is presumably the soil covering the rock when the rampart was built.

The coursed face supports a rubble core consisting of angular blocks mixed with earth, extending northward for 10 feet on line AB. At this point the rubble filling terminates abruptly in a very rough face, resembling the inner face of Rampart I, north of which there were hardly any stones, though there was an accumulation of 2 feet of soil under the turf (Pl. XVII). In Section FG, however, Rampart IV was faced internally with slabs and blocks on edge (Pl. XVIII). Between FG and AB the line of this face is continued eastward by two very large blocks on edge projecting through the turf; the biggest measures $2\frac{2}{3}$ feet high, 3 feet long and over $1\frac{1}{4}$ feet thick at its base. Three slabs, now forming the north wall of hut-circle 1, seem to have been displaced from facing the older rampart on the same line a little farther east. Finally, a large slab, now lying on the turf and seen in the foreground in Pl. XVII, had probably once stood erect on the same line against the irregular wall which now delimits Rampart IV just west of AB.

In Section FG an enormous boulder measuring over $4 \times 3\frac{1}{2} \times 2$ feet had been incorporated in the core of Rampart IV (fig. 2). Between this boulder and the facing slab shown on the left in Pl. XVIII was a space over 6 inches wide filled only with black earth free from any stones, and at its base the rock dipped steeply as if quarried. So the masonry Rampart IV, too, may have been reinforced near its inner margin by a timber breastwork.

Hut-circle 2 is built right over the line of Rampart IV, the northern margin of which can be seen disappearing under the circle wall in Pl. XVII. Stones from the north face have been displaced to form the circle wall, while its floor is just the stump of the rampart core. There is thus no doubt that Rampart IV had gone out of use before the hut-circle was built. It had in fact been long previously replaced by Rampart III, to make room for which the older work had been partly demolished. Twenty-eight feet from AB the outer face of Rampart IV stops abruptly to make room for Rampart III (Pl. XXI). In Section FG only one stone that might have belonged to the foundation of IV could be detected. The inner face still survived in the eastern part of this section, but seems already disturbed on the west (Pl. XVIII, right). In Section LM instead of the inner face of IV we encountered on its line the collapsed Rampart III. This rampart is accordingly later than IV.

Rampart III, whose ruins now form the most conspicuous feature on the western part of Kaimes Hill, follows a quite different line from Ramparts II and IV and is constructed on different principles. Unfortunately these did not make for permanence, and the work is in such a ruinous condition that its line and structure are not easy to define. In Section AB

we were exceptionally fortunate in finding the foundation of the outer face in position 8 feet from the back of Rampart II and preserved over a distance of nearly 12 feet (Pl. XIX). At both ends of this strip the foundation blocks had slipped, and no corresponding face remained in position in the 10-foot wide Section FG.

The basal course of the rampart face in AB consists of quarried blocks, squared in front and on top, of lengths $2\frac{3}{4}$, 1, $2\frac{1}{2}$, and $1\frac{1}{2}$ feet and heights 1, $2\frac{1}{4}$, $1\frac{1}{2}$, and $1\frac{1}{8}$ feet. Three are lying horizontally, but the second is set on edge, being $2\frac{1}{4}$ feet deep (fig. 3). Only one block was resting directly on a boss of rock, the rest on soil generally with wedging-stones under them. No further courses of masonry rest in position upon this foundation. Hardly any stones, fallen outwards, were found outside, *i.e.* south of, the line of face just described. But above and behind it was a stony slope on line AB culminating 7 feet above its base and 8 feet behind it in a crest of stones projecting through the turf (Pl. XX), which can be followed all round the western part of the hill.

In Section AB the slope was found to be formed of an accumulation of stones, mostly 1 foot cube or larger, lying in disorder with much earth between them against the rock which rises in steps 3 feet (from 57.5 to 60.5) in the 8 feet of section (figs. 2, 3). The stones definitely gave the impression of having fallen back inwards from one or more faces in which they had once formed southward-fronting courses. But no foundations for an inner wall were discoverable in the chaos.

Above and north of the rampart crest the unexcavated slope flattens out so that the rampart seems to support an almost level terrace or platform. On the line of Section AB the edge of this terrace is 10 feet south of Rampart IV, but farther west it converges upon the latter, actually crossing the line of its outer face some 20 feet from AB. On line AB and for some 15 feet west thereof the space between the crest and the outer face of Rampart IV was relatively free from stones save for a superficial layer just under turf in the area of hut-circle 1. It is filled with a deposit of soft black earth containing broken bones and teeth of sheep and small ox, in fact a sort of midden deposit. It is upon this deposit that hut-circle 1 rests in so far as it projects south of the edge of Rampart IV.

Removing the loose midden, beginning at the face of IV, we found stones increasingly numerous as we approached the crest of III, and at the crest-line the stones would in fact stand upright in a sort of breastwork, 2 to 3 feet high (Pl. XXI, left). In part of this area we exposed at the base of Rampart IV and roughly level with the rock terrace on which this stands a well-made pavement in and under the midden deposit (Pl. XVI). There was a layer of midden under the pavement, and below

that angular blocks mixed with reddish soil. No hearth or other structures were found on this pavement, and the breastwork cannot be said to stand upon it since paving and midden extend right under it to come out on the stony slope south of the crest.

The breastwork is clearly not an "inner face" to Rampart III. The component stones are not laid in courses but are resting at all angles, and there is midden between and under them. It is rather the result of the collapse of some structure which has simply fallen backward on to an already existing accumulation of midden in such a way that its topmost courses have fallen furthest northwards and become embedded in the midden (fig. 2, J-K). Nevertheless this "breastwork" can be followed westward to Section FG and beyond. Some $17\frac{1}{2}$ feet west of AB the topmost stones that have slipped backwards from the crest are resting partly as usual on midden but partly against the disturbed upper courses of Rampart IV's south face. Eighteen feet from AB Rampart IV breaks off altogether, its line being occupied with loose stones and midden material till at 20 feet distance the stony "breastwork" itself actually crosses the line of Rampart IV to reappear in Section FG (Pl. XXI).

This latter section cuts Rampart III after it has joined and destroyed the older rampart's southern face. The whole slope of the hill behind the inner face of Rampart II was covered with a scree of loose stones presumably cleared off from Rampart III. But large stones resting on virgin soil were first encountered 12 feet north of the inner face of II when the rock was already 2 feet higher than under that rampart. Though none of the stones uncovered here was firmly planted nor supported any building, it is likely from the general plan that the face of III should have stood about this line. Behind it the accumulation of large stones above the sloping rock increased in depth till at 16 feet from II the pile of stones would stand in a vertical face fully 2 feet high, but all lay at different angles with much earth between them (fig. 2). Nowhere was any building found, but the ruin of Rampart III reached its crest on line FG 21 feet from II in a ridge of stones projecting through the turf that carries on the line of the breastwork already described. Beneath it and to the south, too, broken bones and midden material were mixed with the stones. Viewed from the side the whole mess, including the breastwork, again gives the impression of having fallen backwards—on the south-west of the section, obviously over the isolated block left over from the face of IV, on the east partly against the huge boulder belonging to the core of Rampart IV.

Finally, in Section LM we again encountered the breastwork under the wall of hut-circle 2 (fig. 2). Here it had crossed the line of the inner face of IV too, which was here totally missing. It possesses the familiar lack of structure (*cf.* p. 53).

These observations prove that Rampart III was built after Rampart IV. It differed so radically in structure from the latter that it could not just override or incorporate its face when the two structures coincided. The older work had rather to be removed bodily to make room for the new construction. This must have been lofty enough to support the platform on which hut-circle 1 was subsequently erected. The retaining wall of this platform must have risen at least 9 feet above the wall base exposed in Section AB, and probably a couple of feet higher since some of the stones embedded on the midden against the inner edge of the "breastwork" had apparently once stood upon it. Neither the shallow scree excavated in FG nor the few stones outside the face in AB would suffice to build a wall of anything like this height. The face of the terrace must then for the most part be represented by the stones found behind the line of face which we have already described as having fallen backwards on account of their observed inclination.

Now, though the quantities of stones and earth removed from behind the line of face in both cuts were really substantial, the large blocks surviving would not suffice for much more than a single face of the requisite elevation; at best two parallel faces or stages might have been built with them. In no case was material available to represent a compact rubble core like that of Rampart IV, nor, even allowing for loss by erosion, was the intercalated earth sufficient to make up the defect. The simplest explanation for these deficiencies seems to be to postulate rows of vertical posts backing up the assumed masonry face and horizontal beams tying it, not into a parallel inner face as in an ordinary Gallic wall, but rather into the sloping face of the hill itself. This stone and timber wall could then have supported the platform of made earth—midden and broken stones—that still survives behind the so-called breastwork. The latter would of course be just the result of the hypothetical face's collapse backward upon the platform core as the tie-beams and uprights decayed. Owing to the nature of the rock, the sockets, if any, for the timbers could not be detected. Dr G. Bersu has, however, described to me forts constructed on the above plan on the Continent, such as the Hradišt of Stradonice near Praha, and when he inspected Kaimes Hill with me in 1938 was impressed by the similarity of its appearance to that of the Continental forts in question.

Hut-circles.—Two hut-circles, standing on the platform formed by Rampart III, were visible in the threatened area and were explored. Circle 1, 12 to 25 feet west of AB, stands as already stated largely on the stump of Rampart IV. The northern segment of its wall is in good condition and is formed partly of stones originally belonging to the inner face of Rampart IV. The six best stones, beginning on the east, measure respectively:

(1)	1 foot 6 inches	broad	by	1 foot 5 inches	high	by	1 foot 2 inches	thick.
(2)	1	"	3	"	"	1	"	5
(3)	1	"	3	"	"	1	"	1 inch
(5)	2 feet 5	"	"	"	"	1	"	5 inches
(6)	1 foot 8	"	"	"	"	1	"	6
(7)	0	"	7	"	"	1	"	2

The first three stand nearly vertical with wedging-stones under them; they rest on a layer of earth and rubble, the core of Rampart IV, going down 18 inches to the rock. Stone 4 has been split by weathering. Stones 5 and 6, which have been shifted just off the line of the inner face of Rampart IV, have both tilted forward on their bases into the interior of the hut. The outer wall was just a packing of earth and boulders against the internal uprights (Pl. XVII). Stone 7 might, on the analogy of Circle 2, be one jamb of the door. Next to it is a prostrate slab, the original position of which could not be precisely determined.

South and west of these stones it was not easy among many stones, projecting through or just covered by the turf, to distinguish those defining the hut from those belonging to Ramparts III and IV. The somewhat arbitrary selection made gives the circle a diameter of 14 to 15 feet. The floor level was given by the bases of the north wall slabs and by a few vestiges of paving, particularly slab O. For the rest the floor had been completely destroyed by grass roots, and deturfing revealed immediately under the sod merely a bed of angular stones lying at all angles. No hearth survived. A large prostrate slab (Pl. XVII, centre), found partly bare of turf a little south of the supposed centre, had once stood upright in a socket recognisable among the stones right on the line of Rampart IV's south face and might have formed a fire-back. The stony substructure of the hut floor extended beyond the southern edge of Rampart IV to the crest of Rampart III, but it was impossible to distinguish with confidence the hut's boundary and substructure from the stones fallen inwards from Rampart III.

Hut-circle 2, situated 76 to 90 feet west of AB, was better preserved than No. 1. The stones of the wall indeed are less substantial than those forming the north wall of Circle 1, but a sufficient number could be recognised to define a circle 12 to 14 feet in diameter. The northern half of the circle had been paved, largely with small thin slabs that had been split and displaced by grass roots. The floor, thus defined, slopes down north to south at least 1 in 6 feet. In the southern half of the circle hardly any paving survived and the floor level had to be defined by the bases of the boundary slabs.

Near the centre two kerbs, set at right angles, and each about 2 feet long, define a paved area, presumably the hearth (Pl. XXIII). The flat slab

found resting upon the western kerb (Pl. XXIII) may have stood upright to form a fire-back on the north. To the north and north-west were vague suggestions of a bench or dais—note particularly the horizontal slab in front of the wall shown in Pl. XXII, upper left. East of the hearth four solid slabs served as lintels to a drain (Pl. XXII). Under these slabs the channel was found empty but not lined with stones. It runs north and south almost parallel to line of Section LM. South of the hearth only a few lintels survived, but the exit of the channel through the southern wall was quite clear and is visible in Pl. XXIII.

On the east of the circle a gap, $3\frac{1}{4}$ feet wide, marked the site of the doorway. The northern cheeks of the entrance passage were traceable for a distance of 4 feet (Pl. XXIII), but the paving had gone. On the south the stones had been so badly disturbed by rabbits and nettle roots that the line of the passage wall was doubtful. The stones of the south wall of Circle 2 abut against or mingle with others which, diverging from them, connect up with the crest of Rampart III exposed in Section FG, and carry on the same line westward from Section LM. The arrangement gives the impression that the rampart crest was already very much in its present condition when the hut was built.

This impression was confirmed by a trench dug along line ML southward through the unpaved portion of the hut-circle. Below the assumed floor level there was, 18 inches south of the hearth, a deposit of black soil practically free from stones extending downwards 2 feet to the solid rock. As we approached the rampart line, however, stones became increasingly common, and just below the circle wall they were sufficiently numerous and close together to stand more or less vertical like the "breastwork" in Sections AB, CD, and JK (fig. 2). But in no case did they constitute a wall like the inner face of Rampart IV in FG or even AB. Under and among the stones some 5 feet south of the hearth began a bed of soil similar in texture to the "midden" of Section AB-CD and, like it, containing animal bones, but here red in colour (? peat-ash). It extended southward among the closely packed stones right into the heart of the collapsed rampart, 2 feet beyond the false face just described. It is therefore clear that here too the accumulation of stones, just as in Section AB, has fallen back upon a pre-existing artificial deposit. But in Section LM it was abundantly clear that the collapse had taken place before the construction of the hut-circle. For the latter rests upon the fallen stones, none of which has fallen into or lies upon the hut floor.

CONCLUSIONS.

This emergency excavation, confined to an intrinsically unpromising area, has allowed the recognition of three phases of human occupation

on Kaimes Hill. The first is represented by Rampart IV, a stone-faced wall with rubble core 10 feet thick, with which may plausibly be connected the outwork termed Rampart II, a stone-faced bank that may have supported a palisade. This system was replaced by the terrace construction termed Rampart III, whose stone and timber revetment followed a different line from Rampart IV but cut across it, whereupon the older work was destroyed to make room for it. Rampart I may belong to the same system, and was in any case almost certainly standing at the same time as Rampart III. Finally, when the revetment of Rampart III had collapsed, hut-circles were built upon its now sloping terrace, which provided the most nearly level foundation available on the southern flank of the hill. East of the area scheduled for immediate destruction, and therefore unexamined, is a hut-circle that seems to stand upon Rampart I as Circle 2 stood upon III.

Unfortunately no relics were recovered to date any of these occupations. Only a shapeless crumb of poorly made pottery was discovered. Half a dozen carefully rounded sling-balls were found in the midden both inside and outside the breastwork formed by III's collapse. From the same deposit came bones and teeth of young ox and small sheep (identified by Miss M. I. Platt of the Royal Scottish Museum). Several hammer stones were picked up, one against the inner face of Rampart IV in Section AB. Slag was found beneath the floor level of Hut-circle 1, at the base of the midden deposit outside Rampart IV near the intersection with III and at the base of Rampart III in Section AB, probably connected with the occupation noted here against the inner face of Rampart II. Finally, just inside Rampart I a very much corroded iron arrow-head of Roman or Romano-Caledonian pattern was recovered. More numerous and helpful relics are of course to be expected from the more sheltered and less steeply sloping areas farther east.



1. Rampart I, outer face.



2. Rampart I, "inner face."



Rampart II, outer face.



Rampart II, inner face.



Outer face of Rampart IV on AB.



Back of Rampart IV and Hut-circle 1.



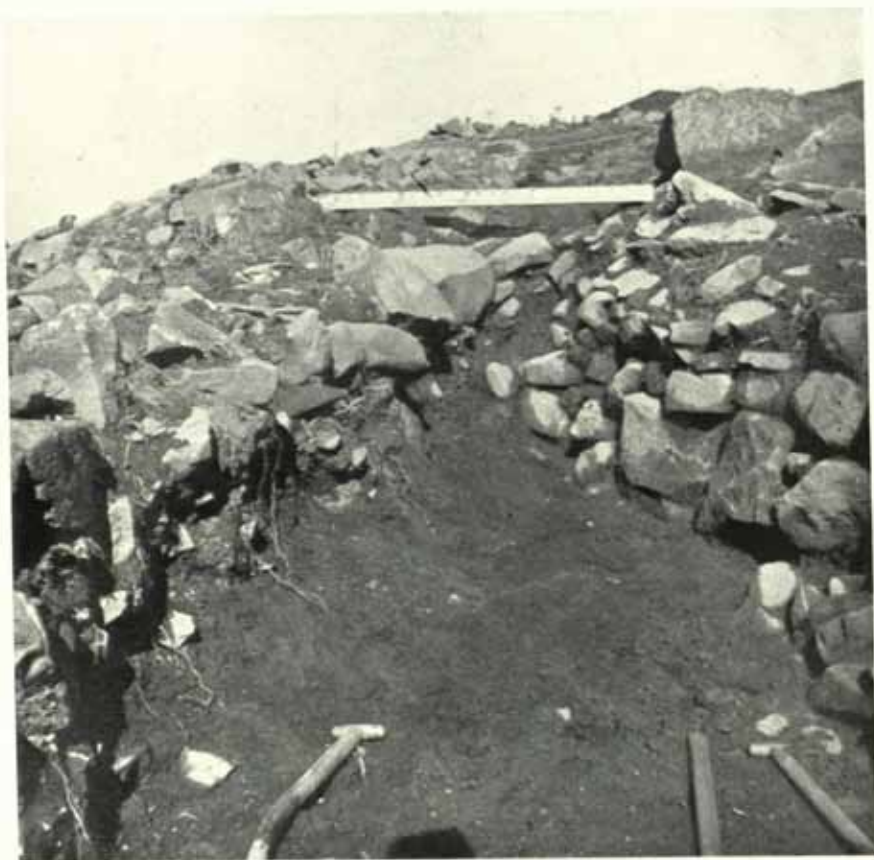
Rampart IV, inner face in FG.



Rampart III, face in AB.



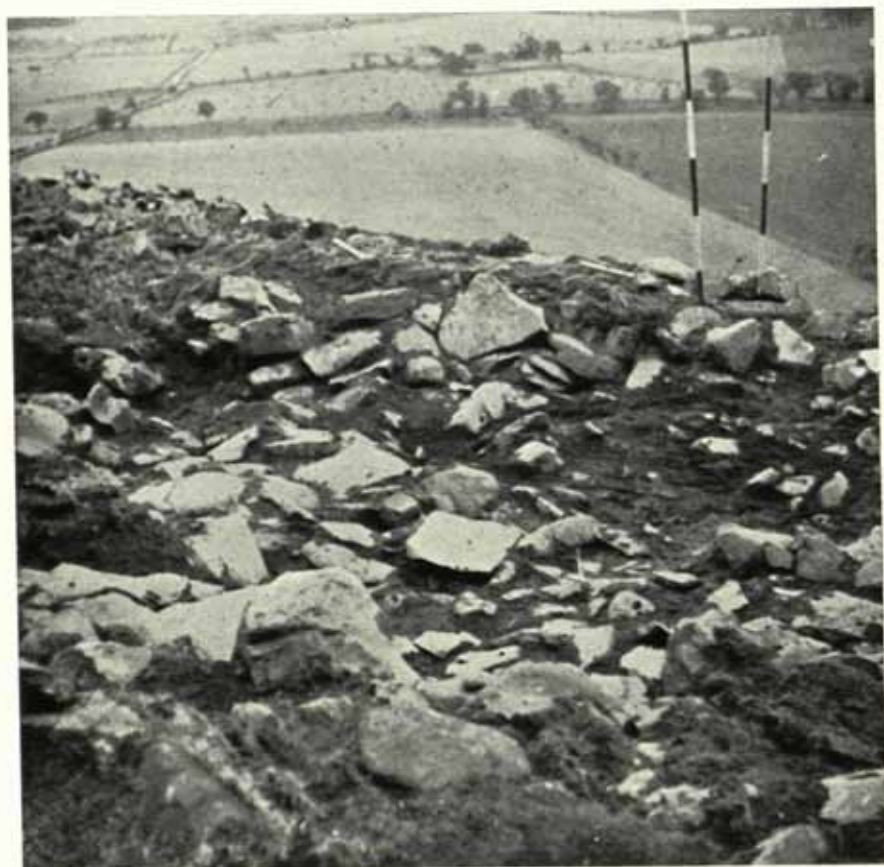
Debris of Rampart III.



Back of Rampart III and end of IV.



Hut-circle 2 looking north-west.



Hut-circle 2 looking south-east.



1. Small trench in raised beach, Albyn Distillery, Campbeltown. Main implementiferous level between the strings.



2. General view of the raised beach, Albyn Distillery, Campbeltown.

W. J. McCALLIEN AND A. D. LACAILLE.

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V.

THE CAMPBELTOWN RAISED BEACH AND ITS CONTAINED
STONE INDUSTRY. BY W. J. McCALLIEN, D.Sc., AND A. D.
LACAILLE, F.S.A.Scot.¹*Read February 22, 1941.*

1. INTRODUCTION.

The flint implements of the Campbeltown raised beach are well known to scientists all over the world. The original discovery of the flints was made by a local naturalist, Alexander Gray, to whom we are indebted for recognizing their importance and for bringing the discovery before archaeologists in a paper ² to this Society.

Many years after the publication of Gray's paper the Abbé H. Breuil described ³ and illustrated some of the Campbeltown flints and discussed their bearing on general lines.

Although referred to from time to time in geological and archaeological works, nothing further was done about the Campbeltown industry until a few years ago, when our friend, Mr Latimer McInnes, of Campbeltown, who was associated with Gray in the original discovery, collected some flints from the locality which forms the subject of the present communication.

The writers' special interest in Campbeltown was awakened many years ago: for one of us during a geological study of Kintyre; for the other during investigations of the lithic industries of Scotland.

In 1935 the writer (W. J. McC.) approached Professor T. H. Bryce with the suggestion that Glasgow University should make a further excavation at Campbeltown. The reason for this was twofold: firstly, to make a collection for the Hunterian Museum; and, secondly, because it was felt that the implements which had been illustrated from the beach were apparently not altogether as typical as one would like. The suggestion was warmly received by Professor Bryce and it was left to the writer to carry it out. With the help of Mr McInnes and Mr Mackenzie of Campbeltown Museum, and of two workmen, he was able to start field work in April 1935, leave from official duties at the University having been kindly granted by Dr (then Professor) E. B. Bailey.

¹ Sections 1, 2, 3, 4, 5, and 6 by W. J. McC.; 7, 8, 9, and 11 by A. D. L.; 10 largely by A. D. L.; 12 by W. J. McC. and A. D. L.

² "Notice of the discovery of a cinerary urn of the Bronze Age, and of worked flints underneath it, at Dalaruan; also of an old flint working-place in the 30-foot raised beach at Millknowe, Campbeltown," *Proc. Soc. Ant. Scot.*, vol. xxviii. (1893-94), pp. 263-74.

³ "The Pre-Neolithic Industries of Scotland," *Proc. Soc. Ant. Scot.*, vol. lvi. (1921-22), pp. 261-5.

2. HISTORICAL.

As already remarked, we are indebted to Gray for first bringing to notice the subject of the Campbeltown raised beach flints. Since his time, local collectors have continued their explorations at long intervals, and among these workers special mention must be made of Mr Latimer McInnes, who has never ceased to be interested in Kintyre problems, whether of language, botany, geology, or archæology.

Gray in his paper of 1894 points out that extensive excavation in the beach material had been carried out continuously for many years, but, unfortunately, nothing is known of the thousands of tons of material, undoubtedly rich in archæological relics, which were removed during that time. In 1886, Gray found half of an urn of Bronze Age type in a sand-pit at Glebe Street, Campbeltown, and it was this find, perhaps more than anything else, which encouraged him to continue the researches which culminated in the discovery of the now famous Campbeltown flints. Some time after this, the finding of pieces of an earthenware vessel at Dalaruan was reported to Gray. The workmen engaged at this place had thoroughly mixed the sand with the remaining pieces of the vessel. In his search for these other fragments, Gray turned over the sand covering the place where the urn had fallen, and after three hours' work he had recovered eight or nine pieces of the broken urn, besides collecting a number of bones and "what I had not expected to find," as he wrote afterwards, a dozen small white chipped flints. This find led to an organized search by members of the Kintyre Scientific Society, the forerunner of the present Kintyre Antiquarian Society. On the first Saturday afternoon they found 132 flints, and Gray wrote that some of the chips looked as if they had been burned.

It is necessary for us at this stage to consider carefully the stratigraphical conclusions arrived at by Gray, because, as we shall indicate later, they differ in detail from those arrived at during the present investigation. Gray was indeed particularly fortunate that, when he was engaged in the study, large-scale commercial excavations were being made. The succession of the beach material from which he collected his flints was as follows:—

	Ft.	Ins.
4. Dark loamy soil	2	6
3. Sandy gravel with a few large rolled stones	2	0
2. Fine sand with occasional small rolled stones	2	2
1. Fine gritty shingle and sand	1	2
	<hr/> 7	<hr/> 10

According to Gray all the flints were collected *in situ* in the lowest stratum (1, above), but later he found flints in the other layers, and it was his opinion that they were distributed all through the deposit.

Gray was also of the opinion that the people who made and used the flints "lived there when the sea rolled up to or over the old beach, which they [*i.e.* the Bronze Age people] now converted into a cemetery." He emphasizes the view expressed in the first part of this quotation by continuing: "That the sea washed over the old beach, at least during storms or exceptionally high tides, at the time when some of the flints were dropped there, is sufficiently evident from the fact that a few of them, after dressing, have been tossed about in the sea till their sharp edges and angles had been worn quite smooth."

The majority of the flints collected by Gray and his colleagues are, however, still as sharp-edged and angular as when first broken.

It has already been mentioned that a party was organized to make a thorough search for flints. On returning home from this search one of the party, Mr Watson, picked up flints in beach material known to have been taken from Millknowe. Gray then visited this site, and found flints in great abundance from the lower part of the deep black soil downwards to a depth of 4 feet into the shingle, and about 7 feet from the land-surface. The section at this part was as follows:—

	Ft.	Ins.
4. Black loam	3	0
3. Shingle, very little sand	2	0
2. Thin dark-coloured band thinning out on both sides	0	3-6
1. Shingle	2	0
	<hr/> 7	<hr/> 6

The thin black band (No. 2) was interpreted as an old camp site, and because Gray recorded 2 feet of shingle (No. 3) over this layer he naturally continued to speak of the flints as occurring *in* the beach material. Although this is contrary to the general experience of the present writer, he is prepared to accept it, having discussed the question carefully with Gray in the field, and knowing Gray to be a trustworthy naturalist. He also accepts Gray's conclusions regarding the site mentioned above.

It is unfortunate that no map was included in Gray's paper to show the exact localities from which he obtained flints, but one of us has been fortunate in getting first-hand information on this point from Gray himself.

The Abbé Breuil's classic paper appeared in our *Proceedings* in 1922, and we need not apologize for referring to it fairly fully here, as it is the

only work extant on the typology and age of the Campbeltown raised beach culture.

Breuil emphasizes first of all that the Campbeltown tools are different (1) from those of the Neolithic industry of Scotland; (2) from the true Tardenoisian (not then very well known, it is true); and (3) from the characteristic tools from the Oban caves and other Azilian deposits of Western Scotland. The Campbeltown artifacts taken as a whole, he says, consist of flakes showing a Magdalenian aspect.¹ These flakes were detached from nuclei and cores, the angles of which are sometimes battered; many show no re-working, but numerous notches resulting from use; a small number are re-worked into end-scrapers; and one of those illustrated by Breuil shows a small point in the centre of its semicircular end. Very rarely does the re-chipping extend to both sides or to a single edge with the other side remaining sharp. The re-working of the side seems to have been for the purpose of removing the edge and transforming it into the back. No graver was at this time seen, but a flake was mentioned as being typical of a spall detached during the fabrication of such a tool. Only one well-defined scaled flake was seen; several large tools were the result of transforming cores into tools; one geometric implement worked on two sides was illustrated (fig. 1, No. 1, of Breuil's paper).

According to Breuil, "the thick patination of the flint does not belie the impression given by the Upper Palæolithic aspect of the tools themselves." Unfortunately, although the question of patination is one we need not discuss, it seems obvious from the present set of artifacts that the patination gives little indication of age, but is in many cases undoubtedly that of the original pebbles from which the tools have been made. This point is well brought out in a few specimens with a broad zone of typical white patination at one end, the other being more or less unpatinated flint, and in others where a strip of freshly exposed flint runs across an otherwise white heavily patinated implement.

Breuil also pointed out that since the Campbeltown industry occurred in the 25-30-foot beach it must be approximately of the same age as the "Azilian" of Oban, the latter occurring in the caves behind the 25-foot beach. With the material at his disposal, however, he could not state precisely that this set of implements was really Azilian.

Until the present excavation no recognizable artifact except flint was known from the Campbeltown sites. One of us (A. D. L.) has repeatedly drawn attention to the existence in Scotland of quartz implements where flint was not available; and it is regrettable to think of the enormous number of quartz artifacts from Campbeltown which must have escaped recognition and are now lost for all time. During the present brief examination 271 quartz artifacts and 8 of schistose grit have been collected.

¹ *Op. cit.*, p. 261.

A few broken, but unworked, pieces of agate have also been found and two fragments of shell.

3. THE ALBYN DISTILLERY SITE.

Fig. 1 is a sketch-map of Campbeltown showing the position of the Albyn Distillery site, and Pl. XXIV, 2 gives a general view of the raised beach during the excavation.

One main trench and several smaller cuts were made in the undisturbed beach deposits, and all the material was riddled and carefully examined.

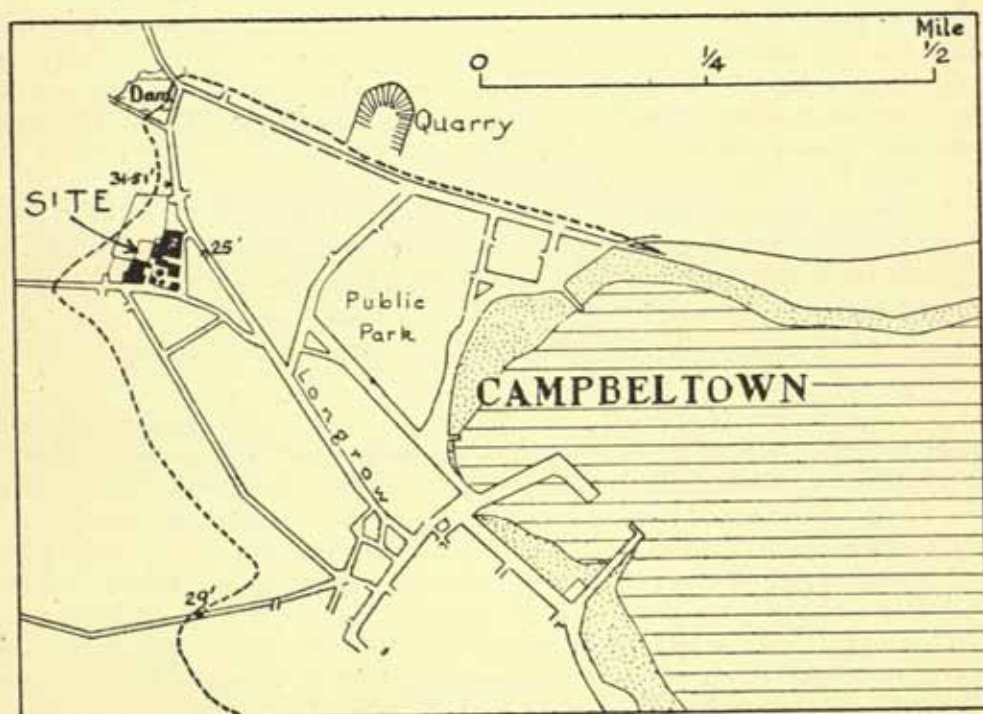


Fig. 1. Index map showing the position of the Albyn Distillery site.

A pit, 7 feet long and 3 feet wide, was excavated in the low ground adjoining the distillery. Flints, similar in character to those recovered lower down and described later, were found in the top 6 inches of soil, but the remainder of the pit consisted of barren sands and gravels with layers of hard pan. The pit was carried down to a depth of 8 feet in the vain hope of reaching the base of the beach material. There are, however, several natural sections in the Campbeltown area showing the 25-foot beach gravels resting directly upon the Boulder Clay without the intervention of any peat bed.

The following section was exposed in the main trench (where the men are seen working, Pl. XXIV, 2):

	Depth.	
	Ft.	Ins.
4. Dark soil	1	8
3. Brown soil, resorted Boulder Clay	3	4
2. Dark layer rich in flints	3	7
1. Gravel and sand in thin beds to .	7	0

Base not reached.

The artifacts were obtained from the 3-inch dirt band (No. 2) and the topmost part of the underlying gravels as well as from the overlying soil. On one occasion a thin dark implementiferous layer was found at a depth of 1 foot 6 inches below No. 2 bed. This did not extend far in any direction and was completely removed in the digging. It was the only dirt band found within the beach, but appears to have been similar to some that Gray found in the original excavations.

Summing up this part of the description we may say that the relics, which form the subject of the present paper, were mostly obtained from a 3-inch layer lying on or at the top of the raised beach deposits, and at a depth of 3 feet 4 inches below the present surface.

4. HEIGHT ABOVE SEA-LEVEL.

It is well known that the height above sea-level of the so-called 25-foot raised beach of Western Scotland varies considerably from place to place. It is generally believed that it attains its greatest elevation of 30-35 feet above high-water mark near the head of Loch Linnhe and that it falls to the north-west and south-west, reaching sea-level east of Lewis. The equivalent beach lies about 5 feet above sea-level near Dublin. Gray originally estimated the height of the beach at Campbeltown as 30 feet.

The height from which the present collection was made was measured from a bench-mark on a nearby house as 32 feet 2 inches. This is by no means the maximum height of the beach here, for it extends much farther inland and rises many feet higher, but the greatest elevation could not be determined without further excavation.

5. ORIGIN OF THE FLINT.

The source of the Kintyre flints seems always to have been a problem. Some think the flint nodules, which furnished the raw material for the artifacts in the Campbeltown beach, were transported from Antrim by floating seaweed.¹ The other view, expressed by Professor V. Gordon

¹ Cf. John Smith referring to flint implements in the Stevenston district, *Prehistoric Man in Ayrshire* (1895), p. 42.

Childe,¹ is that the flint was carried from Antrim by ice during the Ice Age. There is, however, no geological evidence to support such a drift, as the ice movement was in the other direction, namely, from the Firth of Clyde towards Antrim.

We have both given considerable thought to this matter, and have come to the conclusion that human transport is the most likely explanation. This automatically implies intercourse between the beach dwellers on the two sides of the North Channel, intercourse which we shall see is also proved by the workmanship of the flints themselves. While this does not wholly account for the absence of heavy flints from Campbeltown, it may well be a partial explanation.

6. AGE OF THE 25-FOOT BEACH.

In a previous communication² to this Society the writer discussed the age of this beach. Palæobotanical studies indicate that the peat beds beneath the 25-foot beach deposits in both Scotland and Ireland are of Boreal—Early Atlantic age. The formation of the 25-foot beach is assigned to some phase of the Atlantic period. The implements found within the beach gravels at Glenarm on the Antrim coast are believed by Dr Hallam L. Movius, jr.,³ to belong to the earlier part of the Atlantic in most cases, although the making of the beach probably extended into the Late Atlantic.

As we shall have occasion later to refer to recent work on the Antrim beaches and their contained industries, we need merely mention here that polliniferous horizons have been found in the Post-Glacial deposits at Cushendun which help to establish the age of the raised beach from a climatic and palæobotanical point of view. The horizons which have yielded pollen are Deposits C, E, and F of Table I, p. 62. These are characterized by the lack of Alder, the decline of the Pine pollen-curve from a high maximum, and the high percentage of Hazel. According to Professor Knud Jessen, the age of E and F is lower part of Zone V b, which contains the so-called Boreal Hazel maximum. Deposit C is dated as belonging to the upper part of Zone V b of Northern Ireland. The maximum of the marine transgression occurred after the formation of the Upper (Lagoon) Silt, Deposit C. In other parts of North-Eastern Ireland the marine deposits cover pollen-bearing beds belonging to the central part of Jessen's Zone VI. This applies to Portrush and Coleraine, for example. For further details on these problems the reader is referred to

¹ *The Prehistory of Scotland* (1935), p. 13.

² "Late Glacial and Early Post-Glacial Scotland," *Proc. Soc. Ant. Scot.*, vol. lxxi. (1936-37), pp. 174-206; also G. Erdtman, *Journ. of Ecology*, vol. xvii. (1929), pp. 112-26.

³ "A Stone Age Site at Glenarm, Co. Antrim," *Journ. Roy. Soc. Ant. Ire.*, vol. lxvii. (1937), pp. 181-220.

the relevant section of the report on the Harvard Archæological Expedition's excavations at Cushendun.¹

Campbeltown has so far yielded no palæobotanical evidence of age, but in the Machrihanish district, a few miles to the west, the writer discovered a peat bed intercalated with sands and gravels. The peat has been studied by Dr Su Ting, and a report may be expected from him.

The Antrim equivalent of the Campbeltown beach has long been known for the artifacts it contains, but so much has been written about the Northern Irish industries, and so many opinions expressed concerning their age, that the different views are not easily reconciled. However, much has been done to remedy this state of affairs, and the latest investigations of the Harvard University Mission under the direction of Dr Movius promise to establish an exact culture sequence, so crowning the work of such workers as Messrs G. V. Du Noyer, W. J. Knowles, G. Coffey, R. Ll. Praeger, C. Blake Whelan, and J. P. T. Burehell.

The following is a very brief summary of Movius's main conclusions. The section of the superficial deposits at Cushendun is interpreted as follows:—

TABLE I

Surface Humus	Deposit A	Horizon 4
Upper (Raised Beach) Gravel	„ B	„ 3
Upper (Lagoon) Silt	„ C	
Lower (Marine) Gravel	„ D	„ 2
Lower (Lagoon) Silt	„ E	„ 1
Swamp Peat	„ F	
Resorted Boulder Clay	„ G	
Laminated Clay	„ H	

This section differs somewhat from those previously published by earlier inquirers at the same locality. The differences in the interpretations are dealt with by Movius and need not be considered here.

As indicated in the table, there are four superimposed archæological horizons in these sediments. The artifacts from Horizons 1 and 2 belong to small blade industries assigned to the Early Mesolithic. Those from the Upper (Raised Beach) Gravel, Deposit B, are assigned to the Late Mesolithic and show the development of the Irish Mesolithic towards crudely worked heavy artifacts. The Surface Humus contains a Neolithic industry. Movius believes that the industrial products of Horizons 1, 2, and 3 constitute a provincial Mesolithic culture which he has called the *Larnian*. He groups the artifacts from Horizons 1 and 2 as Early Larnian, and he assigns those from Horizon 3 to the Late Larnian.

¹ "An Early Post-Glacial Archæological Site at Cushendun, Co. Antrim," *Proc. Roy. Irish Acad.*, vol. xlv. C (1940), pp. 1-84.

As the products of the older archæological horizons of Cushendun will be so frequently referred to for comparisons with artifacts from the Albyn Distillery site, further comment may be permitted here. The majority of the components of the blade industry from the Lower (Lagoon) Silt (Deposit E, Horizon 1) are sharp, and all exhibit varying degrees of bluish to black patination. The Lower (Marine) Gravel (Deposit D, Horizon 2) contains a typologically comparable industry rich in its variety of uninjured tool-forms. These usually bear a porcellanous patina sometimes accompanied by ferruginous or manganese staining, or showing little or no surface alteration. It is this industry which has already been equated with that of Campbeltown, and the similarities are brought out in the following pages. Similar geological and archæological evidence has been obtained at Larne and Island Magee.¹

The Late Mesolithic, as has been pointed out above, is represented at Cushendun by the materials from the Upper (Raised Beach) Gravel (Deposit B). Relics, referable to the same culture-phase and occurring in analogous conditions, are particularly abundant at Larne. By their inclusion of a heavier equipment, these industries differ markedly in general facies from those ascribed to the Early Mesolithic.

The raised beach industry recovered at Glenarm, Co. Antrim, is correlated with that from the deposits of the Upper (Raised Beach) Gravel at Cushendun. Moreover, Movius has demonstrated the existence of two cultures at Glenarm. That represented by the artifacts found within the beach gravels is called Glenarm 1 to distinguish it from Glenarm 2, which is the industry from the overlying surface humus. This latter industry, lacking in pottery and ground-stone tools, nevertheless has Early Neolithic affinities. Hence, Glenarm 2, post-dating the emergence of the beach, is assignable to Late or Early Sub-Boreal time, *ca.* 2500 B.C., and is therefore coeval with full English Neolithic.

Glenarm 1, on the other hand, is essentially a heavily rolled, coarse, unretouched industry with some unrolled artifacts. Most of the material was built into the beach during the period of emergence. Movius's conclusion may be quoted here²: "... the flake industry of Glenarm 1 seems to represent the final breakdown of Upper Palæolithic tradition, and it definitely forms a part of the same culture to which the Mesolithic of Scotland may be referred. The types are crude and generalized, and retouched artifacts are very rare; in fact, its entire nature indicates a peripheral culture which has lost its vitality, surviving in a favourable region where the flint supply was abundant." As regards the age of the industrial material, Movius writes³: "It was evidently derived from sites on the foreshore during the sinking of the land and at the time of maximum submergence; and it was re-deposited by the storm waves during the

¹ H. L. Movius, *op. cit.* (1937), p. 209.

² *Ibid.*, p. 210.

³ *Ibid.*, p. 212.

period of emergence. Some of the material in the beach appeared to be *in situ*, however, indicating occupation contemporary with its formation."

Further references will be made to the Antrim industries in later sections.

That the Antrim sites should differ somewhat from Campbeltown is only what one would expect considering the marked geographical and geological differences in the settings of the beaches on the two sides of the North Channel. Cushendun and Glenarm lie at the mouths of deep glens on a coast characterized by strong long-shore currents and with abundant supplies of flint both as pebbles and *in situ* in the Chalk. Campbeltown lies at the head of a large bay with no important river flowing into it and with no local supply of flint whatsoever.

7. THE INDUSTRY OF THE RAISED BEACH.

Mr Alexander Gray's discoveries of stone artifacts in the raised beach at Campbeltown over forty-five years ago only received the just appreciation of their importance with the publication in 1922 of Breuil's classic paper already cited. Unfortunately, the French authority's statement that the appearance of the representative specimens in the National Museum and Kelvingrove Art Galleries and Museum was that of "a poor Upper Palæolithic series, chiefly consisting of flakes showing a Magdalenian aspect" led some inquirers to refer to these Scottish products, and also comparable artifacts from raised beach deposits in Northern Ireland, as of Magdalenian age.¹ Hence it is well to insist that Breuil used the terms in a purely *cultural* sense only. Still, the relics of the food-gatherers who settled on Campbeltown beach constitute the earliest evidence so far obtained of the colonization of this part of Scotland.

When we examine the question of the typology and cultural affinities of the Campbeltown industry represented by McCallien's collection, we are faced, not with a selected series, but with a whole assemblage revealing aspects hitherto unsuspected at this Scottish 25-foot raised beach site.

Extensive and detailed study has been devoted in recent years to the stratigraphy and typology of the artifacts from the Antrim beaches. These investigations have brought to light many points of great interest and importance, which were unknown when artifacts from Campbeltown were last discussed in these *Proceedings*.² We have made free use of this new information, not only as contained in published reports, but from discussions by letter and in conversation. We gratefully acknowledge the help and stimulus given to the present study by the results obtained by workers in Ireland.

One of us (W. J. McC.) has had the advantage of being shown the

¹ *Infra*, pp. 87-8.

² H. Breuil, *op. cit.*, pp. 261-5.

Larne section by Dr Movius during his recent excavations, and the other (A. D. L.) has been able to examine Mr Burchell's artifacts from Northern Ireland and also large collections from the Antrim beach belonging to the Wellcome Historical Medical Museum, London. At this juncture we would both express our deep sense of indebtedness to Dr Movius for having most generously furnished us with photostats of illustrations to appear in his forthcoming work on the cultural development represented in the raised beach deposits at Cushendun. We also acknowledge with gratitude a preview of his paper on the Cushendun site. Without this and his many helpful suggestions the present communication would have fallen far short of the demands of this Scottish industry, a detailed examination of which we feel is necessary to assess the cultural aspects of the relics of the earliest occupation of this part of Scotland. The opportunity is also taken warmly to thank Mr C. Blake Whelan, Belfast, for help and encouragement so kindly given.

With these documents and other information at our disposal we can make a close study of the industry before us. Its importance to Scottish archæology and the fact that it includes so many forms never brought to the notice of the Society are sufficient excuse for the extended comments evoked by inspection of the series recovered by McCallien in the raised beach.

8. MATERIALS.

No less than 1235 objects attesting man's attention were extracted from the raised beach near the Albyn Distillery. Of these, 724 are definable artifacts, 559 being of flint, 157 of quartz, and 8 of schistose grit. The remainder consist of chips, flake-fragments, struck and rejected small scarred flint and quartz pebbles, 397 being of flint and 114 quartz. The analysis of the whole assemblage is given in Table II, p. 66.

An outstanding feature is that very many flint chips seem to have been utilized. This indicates that flint was so much prized here that it was used to the utmost.

The small size of the constituents of this Scottish collection impresses one who has inspected the normal, heavier and larger, but typologically similar series from Northern Irish raised beach deposits. For all that, the aspect of our lot is not affected, and the drawing of comparisons between groups from the Irish seaboard is not difficult. Moreover, as those native rocks, which were also employed in the Campbeltown industry, occur in their raw state as pebbles seldom larger than the imported flint, the facies of the whole group is homogeneous.

The great majority of the industrial relics are undamaged but altered of surface, their edges being sharp and angular. The rolled condition of a few flints (*e.g.* No. 1), however, indicates that these suffered a fair amount

TABLE II
ANALYSIS OF THE ALBYN DISTILLERY INDUSTRY

		Flint	Quartz	Schistose Grit	Totals
Flakes	primary (retaining crust), struck from pebbles	26	11	..	37
	do.	50	7	..	57
	struck from cores, under 1.5 cm.	16	1	..	17
	1.5 to 2.5 cm.	117	29	..	146
	do.	24	33	1	58
	2.5 cm. to 4 cm.	40	17	4	61
	do.	35	16	..	51
	do.	5	3	2	7
	4 to 6.5 cm.	5	..	..	5
	do.	5	..	..	5
	do.	1	..	..	1
	do.	28	..	..	28
	broken (butt-ends)	3	1	..	4
	do.	1	..	..	1
	do.	31	..	..	31
Microoliths	broken (tips)	9	..	..	9
	do.	1	1	..	2
	obliquely truncated and abruptly retouched flakes	1	..	..	1
	do.	2	..	..	2
	retaining bulb of percussion	1	..	..	1
	Flakes, apparently divided by micro-burin technique	1	3	..	12
	End-scrappers (on flakes)	9	..	..	9
	Side-scrappers (on flakes)	6	4	..	10
	Side-scrappers (bifacially worked in small nodules)	2	..	..	2
	Concave scrapers (on flakes)	3	1	1	5
	Notched flakes (<i>lames à coche</i>)	2	..	..	2
	Perforators	..	1	..	1
	Perforator-concave-scrappers	2	..	..	2
	struck pebbles	10	3	..	13
	single-platform	20	3	..	23
Cores	do.	3	1	..	4
	multi-platform	11	..	..	11
	do.	3	..	..	3
	prismatic	..	7	..	7
	do.	1	..	..	1
	discoidal	1	..	..	1
	do.	1	1	..	2
	segmental, with worn edges	6	1	..	7
	Core-scrappers	57	1	..	58
	Core-trimmings	9	2	..	11
	"Thumb-nail" scrapers (on flakes)	5	5	..	10
	Steep end-scrappers (on pieces of nodules)	2	..	..	2
	Thick flakes (cores), edge-injured by attempts to reduce	2	..	..	2
	Picks { Larnie type	..	1	..	1
	{ <i>tranchet</i> (cf. Baltic type)	1	1	..	2
Miscellaneous waste (chips; sundry flake-, struck core- and pebble-fragments)	Scalpriform flakes (bifacially worked)	1	..	..	1
	Gravers { "ordinary" (<i>bec-de-faute</i>), on flakes	3	1	..	4
	{ core and nodule	1	..	..	1
	Graver-spalls	1	1	..	2
	Total of definable artifacts	559	157	8	724
		397	114	..	511
	Grand Totals	956	271	8	1235

of wave-action before finally coming to rest in the present site. Such *état physique* might be taken to point to the greater antiquity of the specimens bearing the signs of injury; but it has to be remembered that wave-action is not uniform everywhere in one deposit. Besides, odd rolled pieces may be carried by streams or tidal currents into a context little affected by waves. Furthermore, no typological differences whatever are discernible between our artifacts, whether rolled or unscathed. Discussing the occurrence of these uncommon blemished examples with Dr Movius, we are informed by him that he has found rare objects in similarly rolled condition associated with the very fresh-looking Early Mesolithic products from the lower gravels at Cushendun.¹

Numbers of the Campbeltown flints exhibit varying degrees of patination, and somewhat similar whitening appears on one of the schistose grit flakes. The surface-change is usually creamy white or dully porcelaneous, sometimes so affecting the artifact that it looks rotted, or sometimes appearing as streaking or mottling. The question of patination has already been referred to (*supra*, p. 58), and so it suffices to recall that these signs of surface-change are never reliable guides to age. They are, nevertheless, interesting in our present study because comparable artifacts, entirely or partly patinated, occur with unpatinated examples in the lower gravels of the Antrim beach.²

A few of the worked flints and quartzes from the Albyn Distillery site bear these reddish-brown stains and adhesions of "iron-pan," that commonly appear on artifacts from the stratified and highly ferruginous gravel overlying the Lower Lagoon Silt at Cushendun.³

In regard to ferruginous staining of flint Mr S. Hazzledine Warren remarks: "Upon some sea-beaches ochreous patination is general, on others it may be observed only along the narrow track of land-springs that are discharged across the foreshore."⁴ This explanation is particularly interesting when it is recalled that the stratified and ferruginous layers intercalated between the Lower and Upper Lagoon Silts at Cushendun have been interpreted as fluvial in origin, their deposition being held to mark a steady sinking of the land.⁵

Many of McCallien's finds are heat-crackled, a feature that is commonest among the waste, and one that indicates their derivation from an occupation-site.

¹ Letter to the writer, dated Harvard University, 9th December 1938.

² J. P. T. Burchell, "Early Neanthropic Man and his relation to the Ice Age," in *Proc. Prehist. Soc. of East Anglia*, vol. vi. pt. iv. (1931), pp. 282-7; also C. Blake Whelan, "The Palaeolithic Question in Ireland," *Rep. XVI Int. Geol. Cong.*, Washington, 1933, pp. 1215-6.

³ J. P. T. Burchell, *loc. cit.*

⁴ In *op. cit.*, *infra* (p. 85); *Journ. Roy. Anthr. Inst.*, vol. lxiv. (1934), p. 108.

⁵ See Professor Jessen in Cushendun report; *op. cit.*, *supra* (1940), pp. 38-51.

9. TYPOLOGY.

Of course the past and recent collections include accommodation-tools in their repertory. But other forms in our series bring out hitherto unsuspected features—that the Campbeltown culture derives basically from an Upper Palæolithic one, and the influence of later elements, which also shows, does not impair the predominating aspect.

Flakes.—These constitute the essential element of the raised beach industry, and are the most numerous of the artifacts. They vary from 1 cm. to 6.5 cm. in length, the most numerous series between 1.5 and 2.5 cm., and the majority narrow. Next in numerical importance are flakes, and implements derived from flakes, between 2.5 and 4 cm. in length, flint and quartz being about equally represented.

Whatever the rock, the simplest flakes consist of corticed *débitage* (No. 2). Numbers of flakes, scarred on the crusted surface, testify to further preparation of nodules (No. 3).

The parallel scars on the delicate flint flakes (Nos. 4-12), detached from repeatedly struck cores, are evidence of a well-developed technique, which is also expressed in many short thick flakes of flint and quartz such as Nos. 13 and 14 (quartz).

Quartz flakes, of which No. 15 represents the commonest type, occur in so similar a range that they may be grouped with the normal flints.

As so few flakes of schistose grit have been found, it need only be mentioned that these, compared with the flints, are wide in proportion to their length, as, for example, No. 16.¹

Although the beach-folk produced well-made implements, they were partial to the use of primary flakes; consequently, very many of the flakes are worn on the edge (Nos. 12, 17-19, flint), relatively few being retouched. In the case of quartz flakes it has been observed that the rock used here is of such indifferent quality that it is very difficult to distinguish utilized edges from those bearing the real signs of trimming.

¹ Except for a flake-fragment from Birkwood, Banchory [*Proc. Soc. Ant. Scot.*, vol. lxx. (1935-36), p. 429, and fig. 3, No. 12], these artifacts of schistose grit are, it is thought, the first figured instances of Scottish prehistoric products manufactured in this rock. Although the writer has already noticed implements of schistose grit from Freswick Bay and Golspie in the north, and has picked up rude cores and flakes struck in it at Shewalton, Ayrshire, no opportunity has until now offered to mention these stray observations and discoveries.

Though possessing the inherent property of conchoidal fracture, schistose grit splits rather erratically under intentional blows, and few qualities are amenable to delicate retouch. Some flakes bear quite fair bulbs of percussion, but others exhibit only a vague diffused swelling. This rock is more tractable than the commoner varieties of quartzite, and in many respects it compares with the grit extensively used by prehistoric communities in the region of Paris. Our schistose grit, however, is not so brittle as the particular grade of grit employed in the very active early Neolithic industry of the Forêt de Montmorency, products of which the writer gifted to the National Museum [*Proceedings*, vol. lxxii. (1937-38), p. 130]. In point of fracture it appears that, although not so tractable, schistose grit most closely resembles the Greensand chert used in Palæolithic and later industries in the south-western English counties.

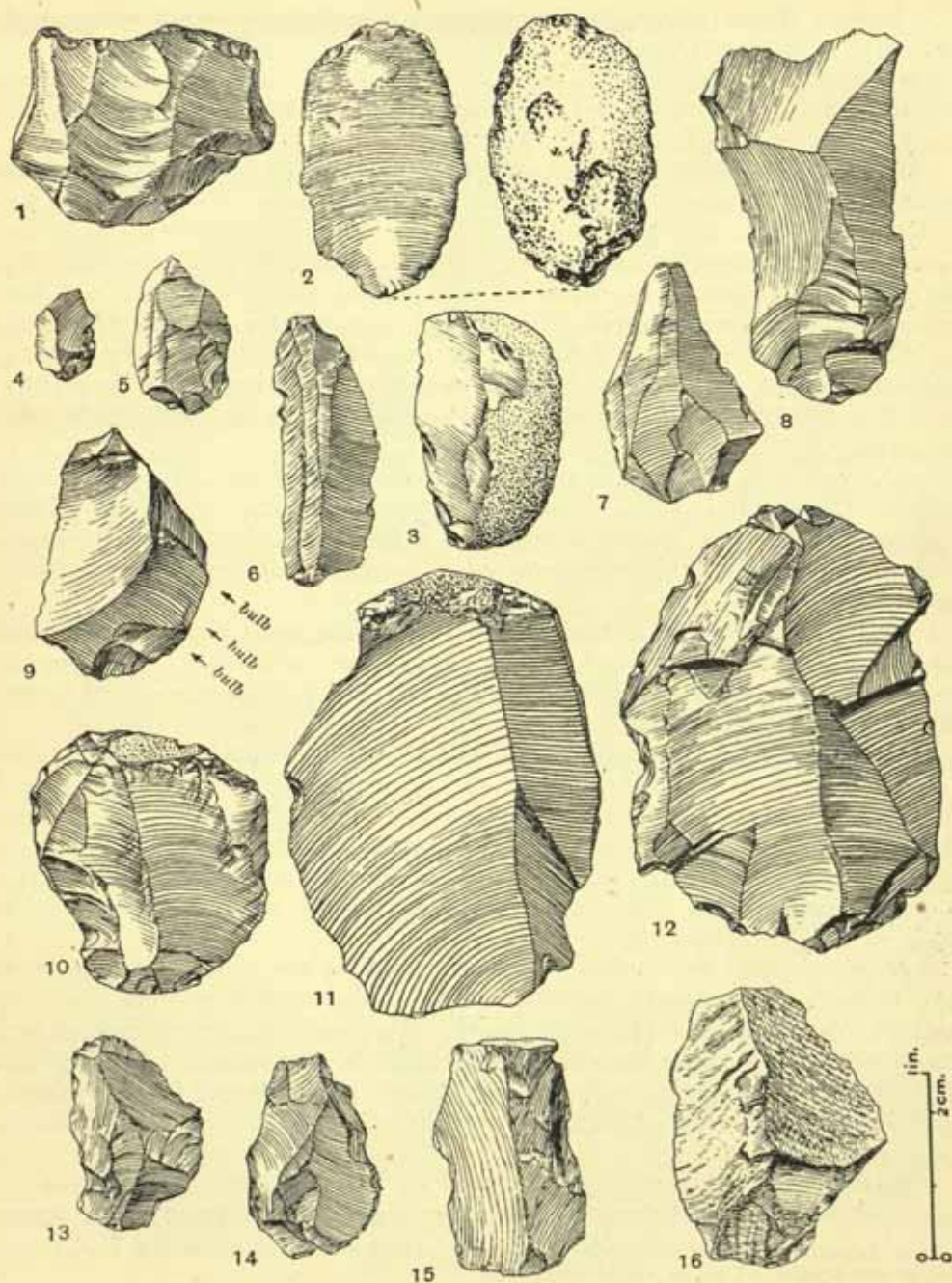


Fig. 2. The Albyn Distillery industry: flakes.

Broken flakes occur, bulbar fragments and upper ends being fairly equally represented. Alteration of surface undergone by many is so complete that the transverse steep scar is similarly affected, an indication that the flakes were fractured not long after production, and most probably as a result of usage.

Upper Palaeolithic stations have yielded great numbers of broken flakes and flake-implements. Study of the injured surfaces of such objects will often reveal how the specimens were fractured, whether with the bulbar surface in compression or tension,¹ so giving an idea how the piece was employed. Whatever be deduced from examination, it stands out that these examples from the raised beach are in themselves further testimony to the very general use of flakes at the site to which flint was brought, as lateral margins of many of these broken examples are worn by service, e.g. Nos. 20-21. One, not figured, has been noted to bear slight edge retouch.

As broken flakes in this group are invariably of flint, the use of such affords further indication of the value set upon this material. (These specimens are to be distinguished from a few obliquely truncated narrow flakes retouched on the transverse edge, to which reference will be made, *infra*.)

Retouched Flakes.—In contradistinction to the great number of utilized flakes, there are but few whose long edges bear retouches. On some of these the dressing is quite delicate (Nos. 22-24) and reminiscent of Upper Palaeolithic workmanship.

No. 25, of quartz, is noteworthy because of the trimming on the longest edge. Instead of this being improved by ordinary retouching, the desired feature has been achieved by removing narrow longitudinal slivers. Evidence of precisely similar treatment of quartz flakes has already been noticed by the writer in the products of many quartz industries.² It is thought the method was adopted to obtain some uniformity of edge in rock of uncertain quality.

Microliths and Micro-burins.—In addition to the flakes referred to in the foregoing paragraphs are two narrow and short specimens, Nos. 26 and 27, respectively of flint and quartz. They are obliquely truncated and steeply trimmed along their transverse edge in the manner of microliths. The first is rudely retouched; but the second, its lower end also truncated, has the added feature of being dressed along the longer lateral margin on the bulbar face.

Though only blunted along part of its curving back, No. 28 can be included in the microlith class, especially since the implement is the upper

¹ A. S. Barnes, "The Flint Implements of the Type-Station of La Madeleine," in *Proc. Prehist. Soc. of East Anglia*, vol. vi., pt. iv. (1931), pp. 316-29.

² "Aspects of Intentional Fracture . . .," in *Trans. Glas. Arch. Soc.*, vol. ix., pt. iv. (1939-40), p. 327.

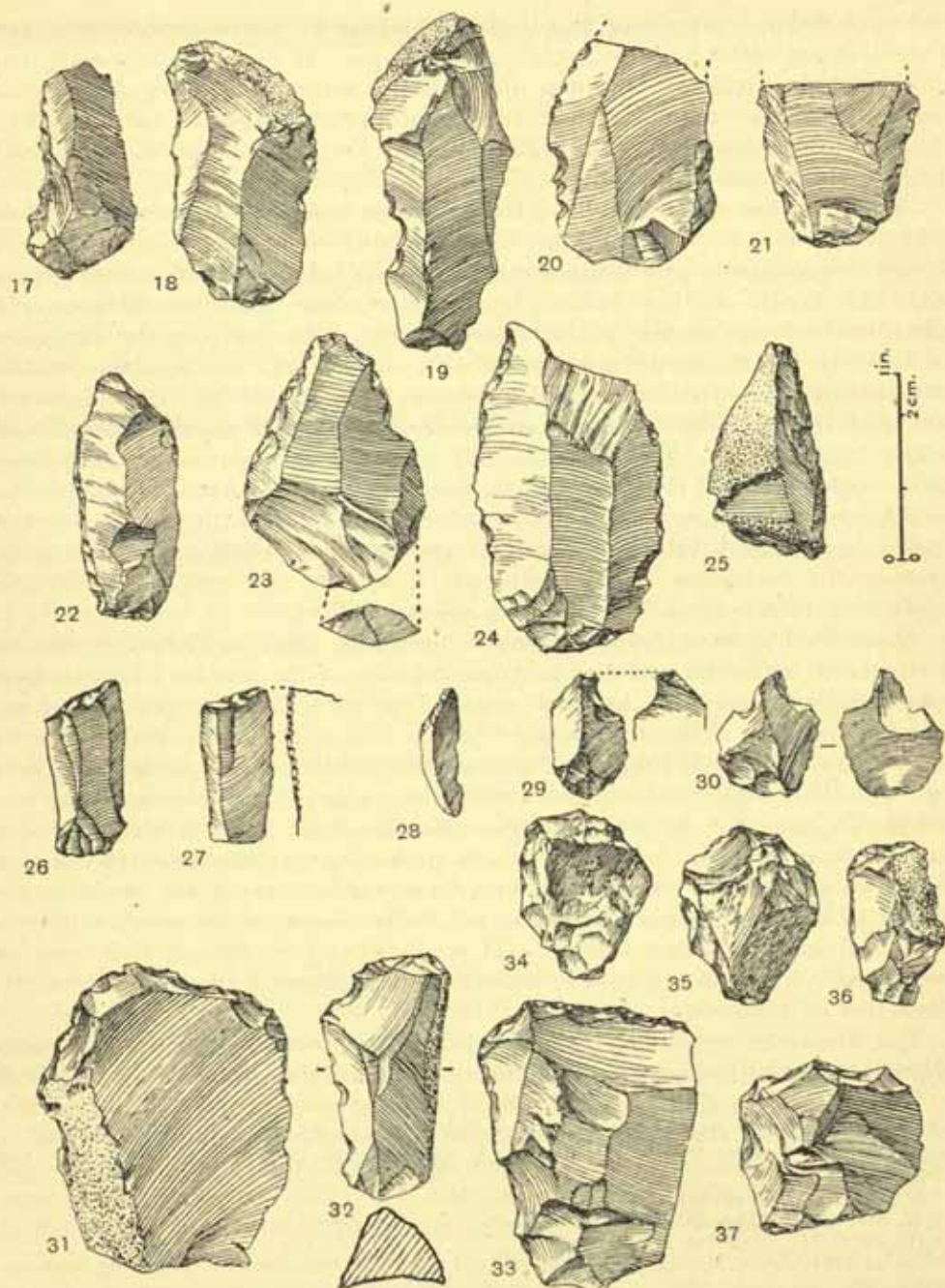


Fig. 3. The Albyn Distillery industry: utilized and retouched flakes, microliths, micro-burins and end-scrapers.

end of a flake deprived of the bulb, doubtless by micro-burin technique. This last specimen particularly, a small steeply dressed subtriangular artifact and a narrow rod, also of flint and similarly battered along an edge (which two artifacts were identified in Gray's series by the Abbé Breuil),¹ establish the microlithic element in the Campbeltown raised beach industries.

As proof that the specialized technique present in Tardenoisian microlithic industries was not unknown to the settlers on our beach, we can record two micro-burins from the excavations. Both are of normal type, with the notch on the right. In the first, No. 29, the characteristic micro-burin facet on the bulbar face is seen at its best, as the knapper, in dividing the flake, accurately hit the critical spot at the base of the prepared notch. In the second specimen, No. 30, the more pronounced scar and the nick in its side point to the delivery of an ill-directed and rather heavy blow. The spreading of the scar also points to the rather indifferent quality of the flint, which, already predisposed to faulty fracture, would break as shown when subjected to accidental added stress.² One small quartz flake, laterally notched, appears to have been fractured by micro-burin technique. The material, however, did not allow of the production of a typical facet such as results in flint.

Micro-burins have not previously been recovered in these conditions in Scotland, although one has been picked up on the surface of the raised beach near Stranraer.³ Another comes from the shell-mound resting on it at Caisteal nan Gilleann, Oronsay.⁴

Irish raised beach deposits have so far yielded no micro-burins; but Burchell claims microliths from stratified ferruginous gravels overlying the Lower Lagoon Silt at Cushendun.⁵ Movius, too, reports the sporadic occurrence of steeply dressed artifacts in his Early Mesolithic Horizon 2 at the same place in Co. Antrim, and figures a battered back blade in his series.⁶ He also informs us that in an Early Mesolithic context a microlith was found at Rough Island.⁷ It would therefore appear that rare as such small forms have proved, they definitely have a place in the early industries of the raised beach.

The abruptly retouched Irish and Scottish forms call for some consideration, as the indications of different methods used in their preparation

¹ *Op. cit.*, p. 263, and fig. 1, Nos. 1 and 2.

² Cf. Ed. Vignard's "éclatement vibratoire" referred to in his "Les microburins du Sébillien," in *Compte-Rendu du Congrès Préhistorique de France*, Xème Session, 1934, Périgueux, pp. 82-3, and pl. viii. No. 6.

³ V. Gordon Childe, *op. cit.* (1935), p. 20.

⁴ H. Breuil, *op. cit.*, pp. 265-6, and fig. 3, No. 1.

⁵ *Op. cit.* (1931), pp. 283-4, and fig. 37.

⁶ *Op. cit.* (1940), p. 57, and fig. 14, Nos. 54-55; and letter dated Harvard University, 8th February 1940.

⁷ Published since; "Report on a Stone Age Excavation at Rough Island, Strangford Lough, County Down," *Journ. Roy. Soc. Ant. Ire.*, vol. lxx. (1940), p. 125, and fig. 5, No. 24.

bear upon the dating of our relics. While the small steeply dressed artifacts generally enhance the Upper Palæolithic aspect of the raised beach early industries on both sides of the North Channel, two sorts of specimens are found in the Kintyre beach. These two varieties, when viewed from the standpoint of technology, shed fresh light on our industry and point to its complex character. Thus, micro-burins and flakes truncated by micro-burin technique occur with blades *à dos abattu* retaining the bulb of percussion. We accordingly have proof of the penetration into the Argyll industry of so-called Tardenoisian methods, which were exercised concurrently with the simpler Upper Palæolithic style. On the Irish shore the steeply trimmed pieces and the absence of the micro-burin indicate that the pure Upper Palæolithic treatment of these objects persisted, and that the raised beach industries received no stimulus from the Tardenoisian. It is also interesting to note that up till now the micro-burin has not been reported from Ireland even among the micro-lithic forms which are common as surface-finds in the northern part of that country. Indeed, as most of these are worked in complete flakes, they seem to be the successors of the Northern Irish raised beach forms.

End-scrapers on Flakes.—Instances of these well-represented forms are figured as Nos. 31 and 32. Several retain patches of cortex, and some are manufactured at the end of short external flakes. Others, again, are fashioned at the end of flakes quite large for this industry, bearing many truncated facets; of these No. 33 is typical.

The dressing differs in character from that of the great majority of Scottish surface-found implements. In the specimens here shown the fairly steep and short retouches are delicate enough, though consisting of the strict minimum necessary to obtain the desired edge. Most end-scrapers on flakes of the raised beach industry are neatly rounded off at one corner only, the full horse-shoe arc, *e.g.* No. 31, being a rarity.

Thick, short, and much-faceted flakes of the type (Nos. 15 and 16) mentioned on p. 68 provided material for the preparation of small scrapers classable with the last-named variety. Illustrated examples, Nos. 34, 35, and 36, the first two quartz and the third flint, are steeply trimmed along the greater part of their round edges.

A few similar but larger flake-implements engrailed at the end, and not retouched in the familiar manner, may be assigned to the general group of end-scrapers (No. 37). Similar implements have been collected by Burchell from the stratified ferruginous gravels at Cushendun.¹

Side-scrapers.—As a distinct form the side-scraper is fairly well represented by examples with convex working-edges. These tools are generally

¹ *Op. cit.* (1931), p. 283, and fig. 35.

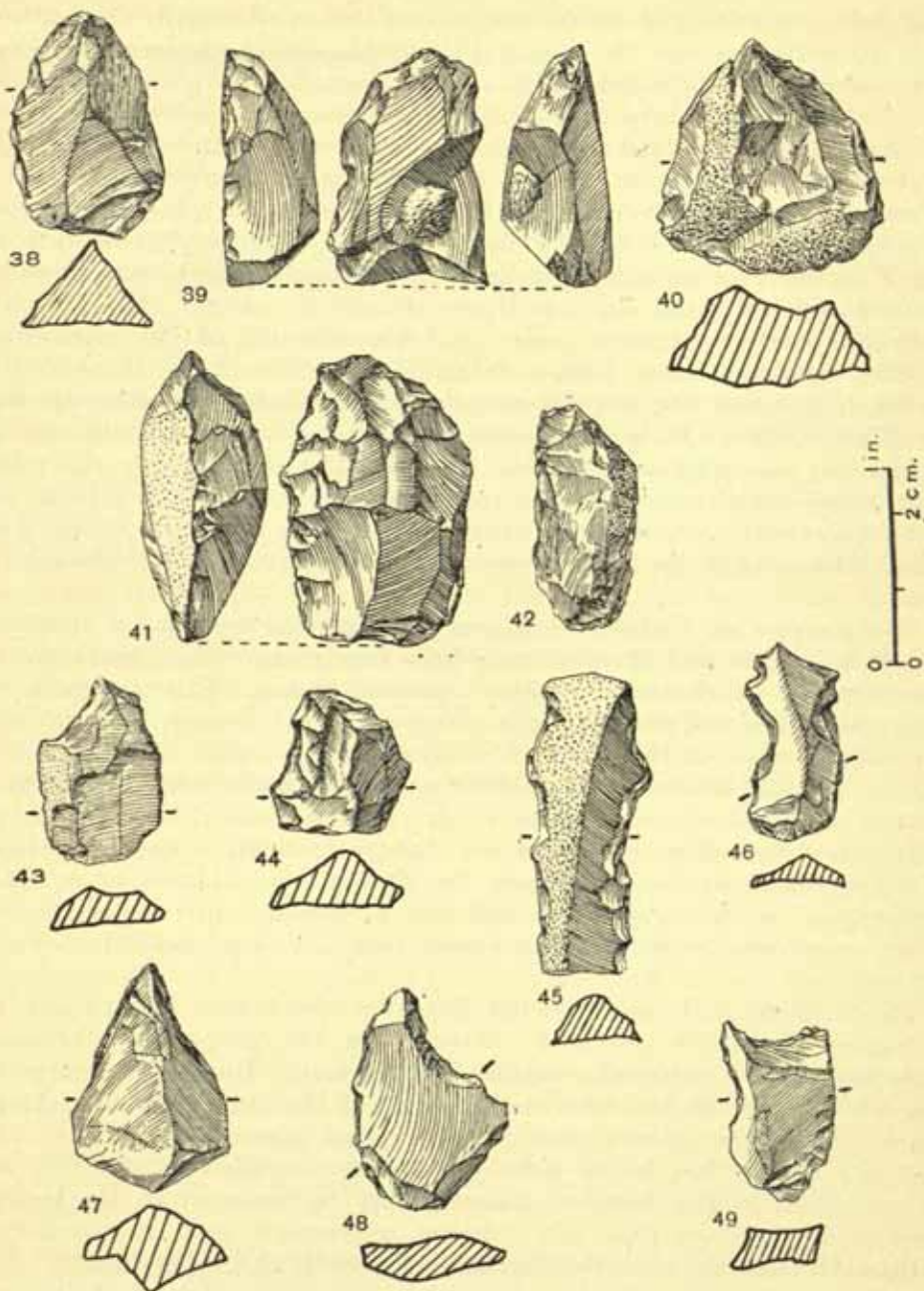


Fig. 4. The Albyn Distillery industry: side-scrapers, hollow-scrapers, notched flakes (*lames à coche*) and perforators.

prepared on thick flakes of triangular section in the case of flint, as Nos. 38-39, and on convenient portions of quartz pebbles, *e.g.* No. 40. The first specimen (No. 38) compares closely with instances noted in contexts from the raised beach at Larne¹ and in the late Mesolithic of Glenarm, Co. Antrim.² We understand, however, that the side-scraper is rather a scarce form of tool in the Early Mesolithic industries of the Northern Irish raised beach.³

Two finely flaked core-tools, Nos. 41 and 42, may be included in this list.

Hollow-scrapers.—Variants may be grouped in this fairly representative series. The simplest consist of flakes with a wide lateral notch, usually on the left (No. 43, schistose grit, and No. 44, quartz). Considering the rock of which it is made, the second of these shows remarkably delicate retouch.

Notched Flakes.—Two notched flint flakes, Nos. 45 and 46, so closely resemble the typical small Aurignacian *lame à coche* that they must be regarded as additional elements of Upper Palæolithic tradition surviving in the Campbeltown raised beach industry. These objects were perhaps intended to serve in much the same way as the side hollow scrapers mentioned in the foregoing paragraph. In any case, the thickness and coarse resolved trimming categorically distinguish these irregularly notched flakes from those prepared for division by micro-burin technique. Considering the common ancestry of the Scottish and Northern Irish raised beach industries, it is not surprising that Antrim Mesolithic horizons yield many similar implements.⁴

Perforators.—A quartz flake with thick and slightly retouched tip, No. 47, which perhaps served as a perforator, may be comprised in this section. No. 48, flint, is a piercing-tool also adapted for use as a hollow-scraper by rudimentary trimming of the fortuitous concave margin of a thin core-rejuvenation flake, worked by trimming the projecting spur. This specimen possesses the added feature of being dressed on the opposite edge. Another flint example, No. 49, is more definite. That its purpose was not solely restricted to perforating is testified by shallow hollows with finely retouched edges on the right of the worked tapering beak and on the left side. The hollows, it will be observed, do not differ from those characterizing the objects grouped as hollow-scrapers.

Specimens resembling these Scottish pointed implements occur in the Mesolithic industries of the Antrim beach, the site excavated at Glenarm by the Third Harvard Archaeological Expedition to Ireland having yielded many.⁵ Even closer parallels to our Argyll examples occur in the lower

¹ W. J. Knowles in *Journ. Roy. Anthr. Inst.*, vol. xlv. (1914), p. 100, and figs. 19, 20, 23, 24, and 29.

² H. L. Movius, *op. cit.* (1937), p. 194, and fig. 4, No. 15.

³ Letter from Dr Movius to the author, dated Harvard University, 8th February 1940.

⁴ *E.g.* at Glenarm, *op. cit.* (1937), pp. 194-6, fig. 4, Nos. 17 and 19.

⁵ H. L. Movius, *op. cit.* (1937), p. 198, and fig. 6, Nos. 31-33.

and upper gravel layers at Cushendun respectively yielding the earlier and later Mesolithic series (Movius's Horizons 2 and 3).¹

It is conceivable that these distinctive forms may be the forerunners of the fine hollow-scrapers which are typical of Northern Ireland.²

Cores.—Struck nodules and cores of schistose grit are absent, but flint examples are numerous and varied. The poor quality of much of the flint is reflected by so many pebbles bearing ill-defined scars, abrasions, and other indications of unsuccessful attempts to detach suitable flakes. Still, well-flaked specimens of flint are not wanting, the conical sort with single platform being common (No. 50). As is well known, this shape is one usually associated in this country with industries which included the production of delicate flakes. Though many cores from here are flaked all round, several consist merely of pebbles from which only some flakes were removed, *e.g.* No. 51, flint, and No. 52, quartz. Some much flake-scarred examples, as No. 53, were struck in two or even more planes.

From a few round or flattish nodules flakes were detached so regularly all round from both surfaces as to leave a discoidal core (No. 54). In other cases the flaking reduced the core to segmental form, as No. 55, flint, and No. 56, quartz. In respect of the latter variant, it will be recalled that the Abbé Breuil commented on cores from Campbeltown, which he thought had probably been used as accommodation-tools. He likened them to hatchets of the kind believed to have been employed throughout the "reindeer period" for cutting bone or as wedges.³ Now, as the edges of the circular core and of the larger segmental ("tea-cosy") one (Nos. 54 and 55) show signs of wear, the artifacts may perhaps fall into the category to which our Honorary Fellow drew attention. These specimens are particularly mentioned, because, despite the fact that no worked bone is to be recorded so far from the Campbeltown raised beach, stone implements to be considered later in this communication indicate that bone-working was practised by the settlers here.

Core-scrapers.—Although the Albyn Distillery site has yielded varied and numerous cores, it has not produced many true core-scrapers. This may perhaps be accounted for by the fact that, where so many accommodation-tools were used, the convenience of the edges of steep cores was not ignored, and, consequently, numbers of flaked-down nuclei served without marginal retouch. No. 57 is an example of the most common sort of

¹ Cushendun report (1940), *cit. supra*, pp. 57 and 63, fig. 14, Nos. 51-52, and fig. 18, Nos. 104-105.

² *A Guide to Antiquities of the Stone Age* (British Museum, 1926), fig. 114, p. 117.

³ *Op. cit.*, p. 265.

Concerning the use of cores as wedges, the present contributor may mention that the late Mr W. J. Lewis Abbott showed him remarkable finds from a kitchen-midden at Hastings, Sussex. These relics consisted of two cannon-bones in each of which a small flint core was so firmly infixed as to be immovable. The longitudinal cracks extending from the end of the tightly fitting flints proclaimed that these could only have been driven in for the purpose of splitting the bone. See also *Natural Science*, vol. xi. (July and August, 1897), p. 45, and pl. vi.

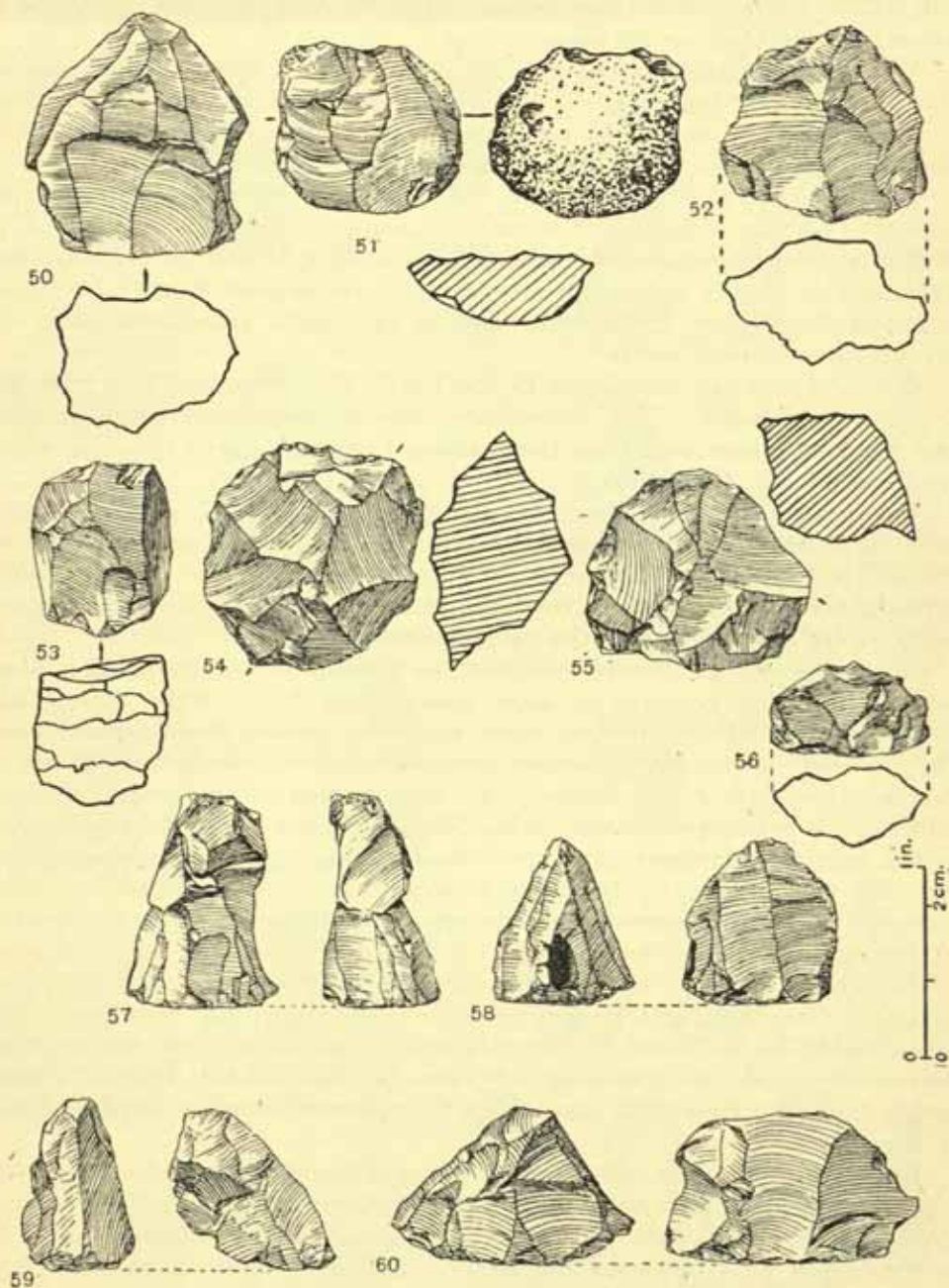


Fig. 5. The Albyn Distillery industry: cores and core-scrapers.

well-flaked conical flint core whose edge, though showing no signs of trimming, yet testifies to service.

With the foregoing are figured two cores, one of flint, No. 58, and one of quartz, No. 59, both transformed by delicate edge-dressing into scrapers of the type so abundant in phases of Upper Palæolithic culture and in Mesolithic industries preserving elements of Aurignacian tradition.

Another specimen, of flint, No. 60, but more finely edge-dressed and belonging to this category, is actually the upper part of a core. Just as obviously as its companions, this object is fashioned in Upper Palæolithic style, and it closely resembles one of the core-scrapers figured by Breuil to stress the Upper Palæolithic aspects in Gray's collections from the Campbeltown raised beach.¹

Core-scrapers are prominent in the Early Mesolithic contexts from the Antrim raised beach. The different workers in Northern Ireland mention and figure numbers matching those taken from the Argyll deposits which are illustrated in these pages.

Core-trimmings, etc.—The lower part of a core, No. 61, calls for notice as a curiosity. At first it reminds one of a Levallois core, an illusion created by the wide flake-scar with its marked hollow of percussion. Actually these features result from the removal, in the plane of the original platform by a deft blow, of the upper part of a core.

Shapely cores of quartz are rare, as the nature of the rock seldom permitted of the removal of more than a few flakes from the nodule. There are several true quartz cores, however, besides those figured here. They consist of elongated narrow prismatic objects owing their shape to the fact that only a few flakes could be detached in the length of small pebbles. A core-rejuvenation flake, No. 62, struck from the same plane as the original platform of a core, shows, nevertheless, that sometimes this rock was sufficiently tractable to stand up to repeated flaking. This piece and the small segmental quartz core, No. 56, indicate how the quality of this rock may vary at one site.

No large flint cores have been recovered by McCallien; and, so far as we know, Gray's collections included none, although their presence in the beach would be indicated by the size and character of some of the flakes discovered² and by trimming or rejuvenation flakes. One of these, struck from the base of a core so as to remove the apex, is represented by No. 63.

In addition to Nos. 62-63 may be mentioned several flakes in the collection which at first sight might seem difficult to assign to their proper place. They are in fact core-trimmings, perhaps more appropriately to be considered in a technological study. Suffice it to say meantime that

¹ *Op. cit.*, p. 263, and fig. 2, No. 19.

² H. Breuil, *ibid.*, pp. 261-3, and fig. 1, Nos. 7, 14, and 16; also Nos. 11-12, *supra*, p. 68.

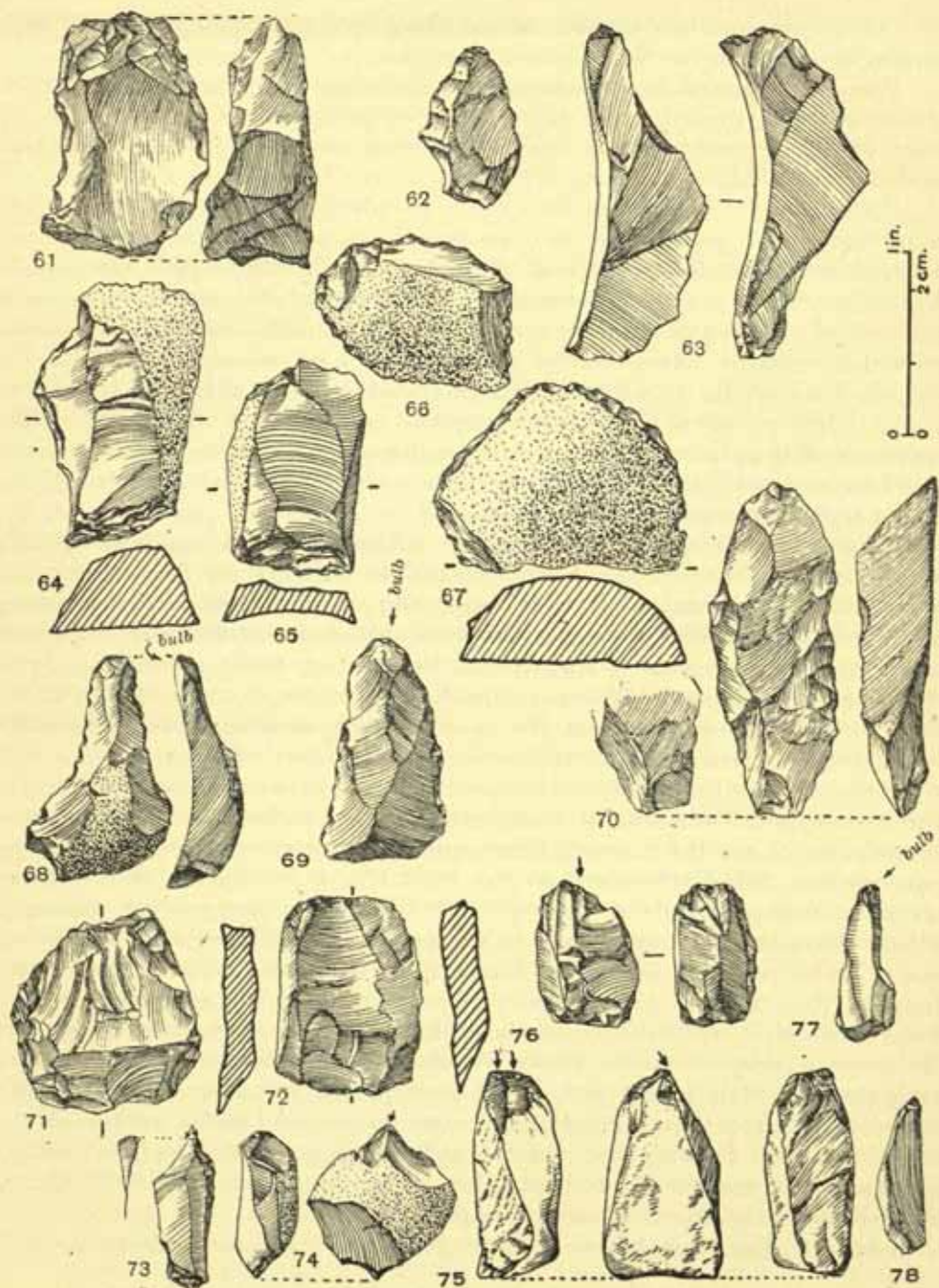


Fig. 6. The Albyn Distillery industry: core-trimmings, scrapers, picks, scalpriform flakes, gravers and graver-spalls.

the principal variants consist of (a) thick pieces struck either at right angles or obliquely to the original platform, and (b) ridged flakes.

Cores so reduced as superficially to resemble flakes, and other objects which may be described as thick slices of nodules and cores, occur, *e.g.* Nos. 64-65. Some of these may have been used as implements without added treatment.

"Thumb-nail" and Steep Scrapers.—In addition to the various scrapers mentioned, and particularly in contradistinction to the core-scrapers, are several small flattish tools best described as "thumb-nail" scrapers, of which No. 66 is a typical example. The specimen figured is trimmed at the end of a primary flake struck from a flint pebble, much of the cortex of which remains. Implements of this kind may be compared with the steeper variety, in whose preparation advantage was taken of the curvilinear edge provided by splitting round pebbles. A finely retouched specimen of quartz has been selected for illustration (No. 67). The retouch on these scrapers, thick and thin alike, is similar to that seen on all the end-scrapers belonging to this industry.

In shape and workmanship these different round scrapers strictly match many found in the Early Mesolithic industry at Cushendun and other Antrim coastal sites. It may also be noted that the dressing applied to these tools, involving the edge only, is quite different from that on their morphological counterparts, which by their associations and character of workmanship are referable to Bronze Age culture. On the other hand, the objects from the raised beach industry closely resemble round scrapers from Azilian and Azilio-Tardenoisian stations.

Picks.—Crude implements peculiar to the Northern Irish raised beach, and prototypes of objects so characteristic of the industries of one place as to earn for them the name "Larne picks," consist of plunging or core-rejuvenation flakes retouched at the bulbar or pointed end on the upper surface and usually on the edges as well. Hitherto the type was unknown outside Ireland, and therefore it is interesting that this form of implement can now be recorded from the Campbeltown beach. The example here figured (No. 68) strictly matches characteristic Irish specimens which make their first sporadic appearance in the Early Mesolithic groups of the Antrim raised beach. Blake Whelan sees in these tools an affinity with the Asturian pick,¹ but, as Movius points out, the form is better regarded as a local specialization peculiar to the provincial culture of the raised beach.² In any case, our Argyll example provides yet another instance of an industrial product common to the culture which flourished on both shores of the Northern Channel.

A kindred but slightly less typical specimen, although similarly worked,

¹ *Journ. Roy. Anthr. Inst.*, vol. lx. (1930), pp. 169-84.

² *Op. cit.* (1937), p. 196, and fig. 5, Nos. 25-27.

may also be shown to stress the analogy (No. 69). As with most of the artifacts from the Argyll beach, the relics in question are much smaller than the majority of comparable objects from Northern Ireland.

A remarkably well-made narrow quartz tool, No. 70, calls for particular comment as probably the most interesting and important single specimen in the Albyn Distillery series. The implement is flaked bifacially in its lower part and on one face only in the upper. The working upper extremity appears to have been intended for service as a pick, but at the lower end the working edge is like that of a chisel. This specimen, occurring in association with certain other suggestive forms, cannot be dismissed merely as an odd intruder. It is particularly significant, although at first sight it might be considered cognate with the "Cushendun picks" and rostroid implements of the Irish Early Mesolithic (Movius's Horizon 2) from the deposits under the Antrim Upper Lagoon Silt. We incline to the opinion that our specimen owes its character to that Baltic influence which also manifests itself in some relics of the Mesolithic culture represented in other littoral sites in Argyll. The writer would add that Dr Movius agrees that, small as is this artifact, it may be taken as indicative of the penetration of Forest Culture into our area.¹ Moreover, as such and as a distinct type, the piece would be the earliest example showing Forest Culture influence in the lithic element of Scottish industries. That this influence appears otherwise is well known from the artifacts of osseous material found in Argyll caves and shell-mounds, which can all be assigned to the Atlantic climatic period.

Until now, the Scottish stone implements showing some Baltic strain have been identified only among surface-finds, and, from the circumstances of their discovery, are not strictly datable. In respect of the Campbeltown quartz pick, however, there must exist a great difference in age between the deposit within the beach from which it was extracted and the shell-mounds resting upon the equivalent beach in Oronsay yielding barbed bone points whose Baltic traits have so often been stressed. It therefore seems needless to add that this quartz tool throws new light on Scottish stone industries.

Scalpriform Flakes.—A small thick flake, of flint (No. 71), found during the recent excavation in the raised beach, gives rise to some speculation. This bifacially flaked specimen can hardly be viewed in the same light as rejuvenation flakes or simple cores. The use to which it was put involved its lower edge. The outline of this is fairly straight, a result obtained by the deliberate detaching of squamous flakes. It is suggested this specimen was used to cut or work bone, or even wood of small section. Otherwise, the equipment of the Campbeltown raised beach industry comprises but few implements for such operations.

¹ Letter, dated Harvard University, 8th February 1940.

In Antrim a crude form of small *tranchet* has been identified in the Early Neolithic industry at Glenarm¹ and at Cushendun,² but we understand that no form approaching the *tranchet* appears in Northern Ireland until Post-Mesolithic times. Nevertheless, we venture to advance the opinion that the object, represented by No. 71, may well have been used in the same way as the small *tranchet* peculiar to the Irish littoral Early Neolithic culture-phase. Further inquiry in Ireland may show that instances occur in Mesolithic industries which compare with the Scottish specimen. A quartz flake, No. 72, may be cognate.³ Superficially this artifact is not unlike the reduced cores Nos. 64-65, and especially the latter. However, the rather fine flaking of the lower edge appears to be distinguishable from the signs of bruising due to blows dealt to thin down the two cores.

Gravers.—In addition to the implements already mentioned, which suggest bone-working, a place is occupied in the present series by forms usually associated with such activity. Few can be recorded, however, and these are poor objects. Yet, the recognition by the Abbé Breuil in the Campbeltown collection, preserved in the National Museum, of a large spall detached from a graver in the making is sufficient indication that fair gravers ought not to be wanting.⁴

The gravers from the recent excavations are of the simplest. Their working-edge was achieved by the bilateral removal of graver-spalls, or by backing one or more graver-facets against a convenient edge of a flake or core. No. 73 is an example of the "ordinary" or *bec-de-flûte* variety, its narrow characteristic working-end formed by a graver-facet backed against another at the upper extremity of a small flint flake. No. 74, a small flaked nodule, may be included here on the score of the terminal chisel-like edge, obtained by backing a short facet on the left against a flattish one.

Quartz occasionally served for this tool-form, and a worked pebble of the hyaline variety is shown by No. 75 as an example of a multi-faceted graver. Actually, this is but an elaboration of its flint companion (No. 74). The chief interest in the quartz implement lies, of course, in the fact that it exemplifies the employment of material generally believed too intractable to permit one to expect good results from the striking required to remove so many fine spalls.

¹ H. L. Movius, *op. cit.* (1937), p. 204, and figs. 64-8.

² Fig. No. 118, H. L. Movius, Cushendun report, *op. cit.* (1940), pp. 65-6.

³ One of us (A. D. L.), in examining vast collections of quartz artifacts from a Late Neolithic occupation-site in the Anglo-Egyptian Sudan, separated numbers of relics which compare with these Scottish artifacts. Some Sudan specimens are in a fresh condition, just as when prepared, and others have been damaged from use. The fact that the African examples are made in quartz, the rock employed to the virtual exclusion of all others for the larger implements, argues for the deliberate manufacture of the type to answer some definite local need.

⁴ *Proc. Soc. Ant. Scot.*, vol. lvi, p. 263, and fig. 1, No. 11.

One more graver selected to represent this series consists of a diminutive flint core worked to a wide graver-edge (No. 76).

Waste spalls of flint and quartz resulting from graver manufacture are figured in Nos. 77 and 78 respectively.

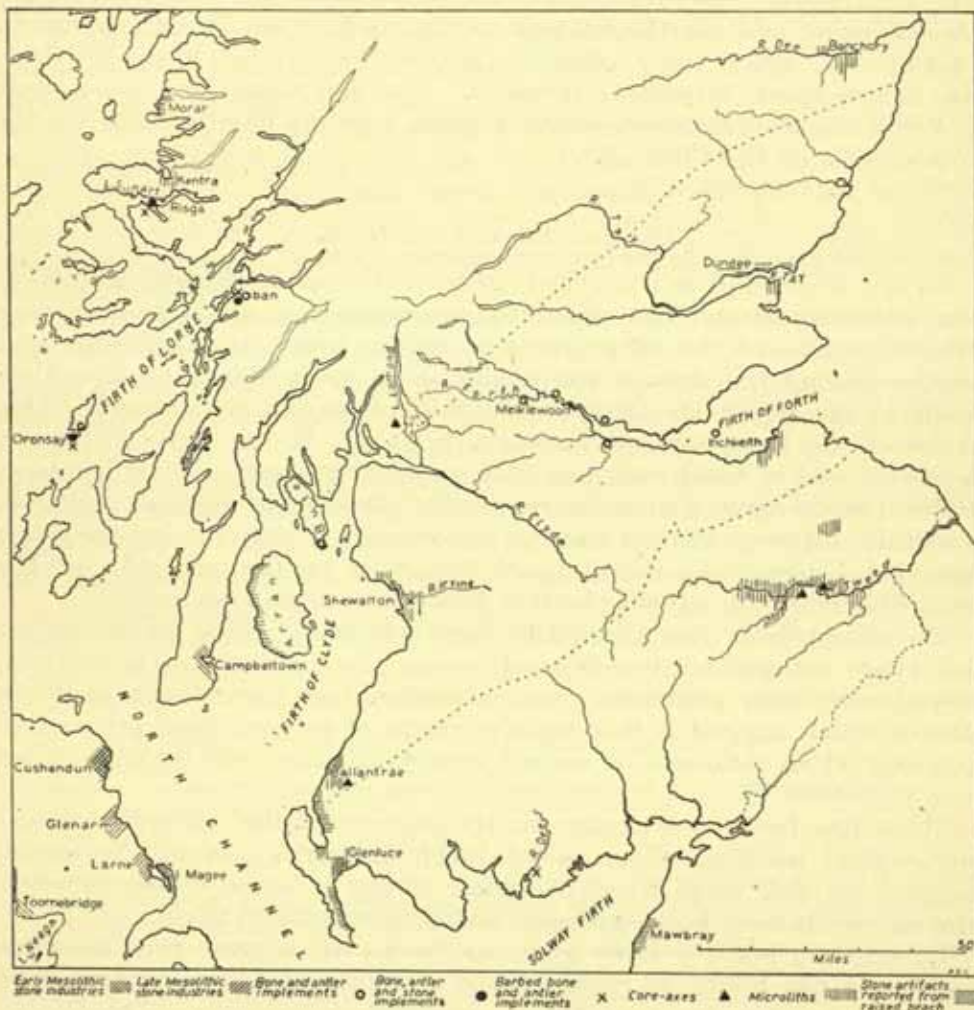


Fig. 7. Sketch map showing the Midland Valley (boundaries dotted) and the distribution of artifacts of Mesolithic facies, according to available data.

Though no large graver can meantime be noted, the examples found near the Albyn Distillery are well made considering their size and the materials. Degenerate as a few of these pieces will appear to those familiar with the excellent tools occurring occasionally in other Mesolithic contexts,

the Campbeltown gravers do not compare unfavourably with some belonging to later Upper Palæolithic industries or with those present in Azilian series.¹

Such forms, claimed to be gravers, as have been illustrated by Burchell, from Irish Early Mesolithic and other contexts of the raised beach are not convincing and may be referred to the category our French colleagues designate *burins de fortune*. Actually, gravers are very rare in the Northern Irish raised beach Mesolithic industry. The fact that these tools occur in Argyll argues for a somewhat greater cultural development on the Scottish side of the Channel.

10. CULTURAL AFFINITIES.

So far as Ireland is concerned, none of the archaeologists, who have been so active lately, has failed to emphasize the similarities existing between certain of the lithic products of the beach at Cushendun, and elsewhere along the Antrim coast, and those made classic by the Abbé Breuil in his paper on the pre-Neolithic industries of Scotland. This review of the Campbeltown industry, however, in the light of present knowledge and of much new material, shows that some associations have not been made known, with the result that students of Scottish and Irish Mesolithic cultures have not had the opportunity of determining the closer connexion between the raised beach industries on the two sides of the North Channel. An advance in this direction may now be made.

The examples in the Albyn Distillery collection, which match certain Irish types not previously observed among the Scottish beach artifacts, have already been mentioned, and attention has been drawn to those features which suggest a link with products of cultures also believed to have exerted an influence on certain aspects of stone-working in Scottish stone industries.

There has been controversy on the subject of the cultural age and chronological position of our raised beach industries. It will be useful, therefore, at this stage to give a brief review of some of the different opinions which have been expressed and to comment on these.

1. Some authorities have gone so far as to suggest that in some localities in the South of Scotland the 25-foot raised beach is referable to the Bronze Age;² others have considered it Neolithic. The Bronze Age view may safely be dismissed at once; and on archaeological evidence attribution to the Neolithic does not stand the tests of typology and

¹ The generally indifferent character of Scottish gravers has been commented on by the writer in a paper communicated to this Society, *Proc. Soc. Ant. Scot.*, vol. lxxii. (1937-38), pp. 180-92.

² E.g. J. W. Gregory, "Some Caves and a Rock-Shelter at Loch Ryan and Portpatrick, Galloway" (J. W. Gregory, James Ritchie, W. Q. Kennedy, and Duncan Leitch), *Proc. Soc. Ant. Scot.*, vol. lxiv. (1929-30), pp. 260-4.

general culture. Nevertheless, the tendency among geologists has been to speak of the raised beach, which is so conspicuous a feature of Western Scotland, as Early Neolithic,¹ but conversations on this point seem to suggest that this term may actually mean something a little older than true (Scottish) Neolithic.

2. The industries have frequently been called Azilian on the score of the bone-work and some of the stone artifacts recovered in the Argyll shell-mounds resting upon, and in the caves and rock-shelters in cliffs behind, the raised beach. Breuil, however, noticed that the Campbeltown stone implements differed from those of Oban and Oronsay discussed by him.² By some it has been urged that such a designation might be acceptable if qualified as *Scottish Azilian*,³ but among the stone artifacts we have considered in the foregoing section the Azilian aspect is by no means marked.

(a) Besides, other considerations would lead us to use the term "Azilian" with caution, even in a restricted sense, in referring to Scottish raised beach relics. Of these we may mention the unmistakable signs of the permeation of Baltic influence in some of the Oronsay and Oban bone-work,⁴ and, as we believe, also in a few stone implements, one being particularly suggestive, from the Albyn Distillery site.⁵

This influence, manifesting itself in Oronsay and at Oban, in situations indicative of very Late Atlantic time (*i.e.* after the transgression maximum), may well have infiltrated to the West from the Lower Forth region, which was reached during Atlantic or even Late Boreal times by a few immigrants, possibly from across the North Sea.⁶ Baltic features, deriving from those which had reached England early in the Boreal period by way of the southern part of the North Sea fen,⁷ became firmly established in that

¹ *E.g.* W. B. Wright, *The Quaternary Ice Age* (1937 edition), pp. 385-7.

² *Op. cit.*, p. 261.

³ See, for example, W. J. McCallien in *Proc. Soc. Ant. Scot.*, vol. lxxi. (1936-37), p. 203.

⁴ H. Breuil, *op. cit.*, pp. 280-1.

⁵ *Supra*, p. 81.

⁶ V. Gordon Childe, *op. cit.* (1935), pp. 17-19.

Having examined the kit of tools and barbed points of bone and antler from Oronsay shell-mounds, and having considered Childe's convincing arguments for the Baltic aspect in the island industry first noted by Breuil (*op. cit.*, p. 279), we can also draw attention to a significant implement from Oronsay which seems to have escaped notice. This is a perforated antler adze we have recently inspected in the Hunterian Museum, Glasgow. The specimen resembles the classic example from the Forth valley at Meiklewood, near Stirling [Childe, *op. cit.* (1935), fig. 2 A, p. 18].

Dr Clark's suggestion that the very numerous utilized long pebbles recovered in the Oronsay shell-mounds may have served in the same way as the Baltic kitchen-midden axes ought not to be overlooked [*The Mesolithic Age in Britain* (1932), pp. 14-15]. Similar objects have been found at different places in Britain, usually where material suitable for the production of large stone implements was not obtainable, *e.g.* Cornwall, Wales, Inchkeith. The Abbé Breuil, however, sees in these tools flaking-instruments employed in the preparation of stone (*op. cit.*, pp. 267-70, and fig. 4, Nos. 2-8).

⁷ S. H. Warren, J. G. D. Clark, H. and M. E. Godwin, and W. A. Macfadyen, "An Early Mesolithic Site at Broxbourne sealed under Boreal Peat," in *Journ. Roy. Anthr. Inst.*, vol. lxiv. (1934), pp. 101-28; also A. Leslie Armstrong, *Man*, 1922, No. 75.

country by the succeeding Atlantic period,¹ during which they may also have penetrated into Scotland from south of the Cheviots. In this connexion a lithic industry, referred by Dr C. T. Trechmann to Maglemosean culture and assigned by him to the Early Atlantic period, from the Hartlepool forest bed,² certainly ought not to be overlooked.

(b) Sensible of the weight of authoritative opinion for an Azilian aspect in the barbed points of the Argyll shell-mounds and caves, we admit that there seems to exist no chronological difficulty for the extension toward Scotland of Azilian strains appearing in what has been described as the hybrid bone-work of Oronsay and Oban. It is thought possible that true French Azilian culture, which may be assigned to Boreal or earlier times, may have spread northward by sea-routes from the classic region to Western Scotland, where its vestiges would suggest the remarkable coalescence of French epipalæolithic and Scandinavian Forest Culture elements. It can be appreciated that with long halts at favourable shore-sites in new conditions, and probably under the influence of different contacts, many of the industrial traditions of Le Mas d'Azil faded with the passing of the ages to mere lingering echoes.

The Argyll middens and caves, containing these bone artifacts, respectively rest upon and lie behind a beach equatable with the Littorina transgression of the Baltic. Their contents, therefore, are later than the Ancyclus Maglemosean, and they approximate to the third stage of Baltic Forest Culture (Ertebølle).³ Now, in Baltic chronology, which cannot yet be applied with certainty to our deposits, the period of the Littorina raised beach may be taken as 5000-2500 B.C.,⁴ the maximum transgression in Denmark taking place about 4500 B.C.⁵ It is therefore interesting to recall that in an authoritative work, published in 1919, Azilian man was spoken of as having entered Scotland at least tens of thousands of years ago.⁶

3. To call the Campbeltown industry Azilio-Tardenoisian, as one of us (W. J. McC.) has done in a recent book,⁷ appears to the senior author to be stressing a coalescence at best but faintly suggested in a mixture of various elements. Among these one has to consider the elements most frequently urged by different authors as dominant, and mentioned below.

¹ Papers on the Lower Halstow site by J. P. T. Burchell, in *Proc. Prehist. Soc. East Anglia*, vol. v., pt. i. (1925), pp. 73-8; *ibid.*, pt. ii. (1926), pp. 217-23; *ibid.*, pt. iii. (1927), pp. 288-96.

² "Mesolithic Flints from the Submerged Forest at West Hartlepool," in *Proc. Prehist. Soc., N.S.*, vol. ii., pt. ii. (1936), pp. 161-8.

³ V. Gordon Childe, "The Forest Cultures of Northern Europe . . ." in *Journ. Roy. Anthr. Inst.*, vol. lxi. (1931), p. 333.

⁴ J. G. D. Clark, *The Mesolithic Settlement of Northern Europe*, p. 221.

⁵ K. Jessen, *Det Kgl. Danske Videnskabernes Selskab. Biologiske Meddelelser*, xii. 1, Copenhagen, 1935, p. 41.

⁶ J. W. Gregory, *Geology of To-day*, London, 1919, p. 319.

⁷ *The Geology of the Glasgow District* (Blackie, 1938), p. 148; also *Proc. Soc. Ant. Scot.*, vol. lxxi. (1936-37), p. 203.

In what concerns Tardenoisian influence, however, we have better evidence, as, though not marked by numbers in the Argyll raised beach industries, it is manifested by some stone artifacts, including that most significant cultural index, the micro-burin. The precursors of these forms, which testify to the absorption in Scotland of yet another industrial element during the Atlantic climatic period, are believed to have first reached England in Late Boreal times.¹

4. The products of the Campbeltown raised beach and the comparable industrial relics from Antrim deposits have been referred to phases of the Upper Palaeolithic.² This attribution is doubtless based on too broad an interpretation of the Abbé Breuil's generalization of the facies of the stone artifacts examined by him. Yet, a few years before Breuil had the opportunity of inspecting our Scottish series, the Oronsay shell-mounds were stated by the late Professor J. W. Gregory to belong to a final phase of the Upper Palaeolithic.³ Nor is it so long since this geologist expressed the opinion that it was possible that in some localities in South-Western Scotland and Northern Ireland the raised beach might be referable to an Upper Palaeolithic age.⁴ But in the light of new knowledge, and for geological reasons, attribution of the so-called 25-foot raised beach and its contained industries to a phase of the Upper Palaeolithic may now with confidence be set aside.⁵

Nevertheless, Upper Palaeolithic characteristics, which appear in the industries of the raised beach, must be considered in the light of their extension toward Scotland. They persisted in the upper layers of Creswell,⁶ and, although becoming debased with the northward trend of Mesolithic culture, were to some extent preserved in English microlithic (Tardenoisian) industries. Dr A. Raistrick has endeavoured to show that these reached the Pennines by Late Boreal times and the coast of Northumberland not long after.⁷ Unfortunately, this claim, which is attractive when one considers the problem of the march of these industries toward Scotland, has not been everywhere accepted.⁸

From the foregoing observations it may now be seen that the Upper

¹ J. G. D. Clark, "Report on Recent Excavations at Peacock's Farm, Shippea Hill, Cambridgeshire," in *Antiq. Journ.*, vol. xv. (1935), pp. 284-319.

² E.g. J. P. T. Burchell, (a) *op. cit.* (1931), pp. 271-84; (b) *Nature*, 14th May 1932.

Mr Burchell revised this opinion in his endeavour to correlate the Antrim industries with phases of Baltic Forest Culture.—"Some Littoral Sites of Early Post-Glacial Times located in Northern Ireland," *Proc. Prehist. Soc. of East Anglia*, vol. vii., pt. iii. (1934), pp. 366-72.

³ *Op. cit.* (1919), pp. 318-19.

⁴ *Op. cit.* (1929-30), p. 264.

⁵ W. J. McCallien, *op. cit.* (1936-37), p. 198.

⁶ A. Leslie Armstrong, "Excavations at Mother Grundy's Parlour, Creswell Crags, Derbyshire," in *Journ. Roy. Anthr. Inst.*, vol. lv. (1925), pp. 161 and 174, fig. 13.

⁷ "Mesolithic Sites of the North-East Coast of England," in *Proc. Prehist. Soc. of East Anglia*, vol. vii., pt. ii. (1933), p. 197.

⁸ H. Godwin and J. G. D. Clark, "The Age of the Pennine Peats," *Man*, 1934, Nos. 68 and 69.

Palaeolithic tradition, so often stressed as being strong in the Argyll raised beach industry, was not the only influence which left a mark upon the lithic products of the settlers in what must be regarded as a refuge area, embracing a considerable part of South-Western Scotland and much of Northern Ireland.

5. How the various categories of artifacts constituting our raised beach industry compare with those belonging to diverse cultures has been noticed in the preceding section on the typology of our series. Analogies with Irish objects have been particularly stressed as furnishing the most obvious parallels, and we may now briefly mention the different Antrim cultural facies.

It has been determined beyond doubt that the Campbeltown groups in most of their component classes compare strictly with those of the Antrim series assignable on geological and allied grounds to the Early Atlantic period, and for archaeological reasons to Early Mesolithic culture. In Northern Ireland the products of the two Mesolithic culture-phases are typologically distinguishable. The early facies is characterized by delicate blades and fine tools. The later series, though still possessing traits testifying to its remote Upper Palaeolithic ancestry, yet shows marked differences due to the infusion of new elements.¹ Its constituents are coarser with a tendency to heavier equipment produced to cope with changing conditions. The core-axe, which seems to have been introduced into Ireland about this time, is thought to indicate the infiltration into that country of Forest Culture elements. In Antrim, not unexpectedly, however, there appear to have been several local developments, as seems attested by a number of forms so distinctive as to have earned for these types designations from places where they have been recovered in abundance.

For the Early Post-Glacial culture represented by the Early and Late Mesolithic industries of the Antrim raised beach Movius proposes the name *Larnian* after the classic site. Agreeing with him that in South-Western Scotland and North-Eastern Ireland there exists an indigenous Mesolithic province, and considering the identity of the Antrim early implemental series with the Argyll industrial relics, we may safely group the Campbeltown culture with his Early Larnian.

Attention is nevertheless drawn to the fact that on the Scottish coast no industry has yet been found which is stratigraphically separable as the equivalent of the elementary Early Larnian of the Lower Lagoon Silt. Moreover, the Campbeltown equipment is demonstrably somewhat more comprehensive and advanced culturally than Movius's evolved Early Larnian from the gravels between the Lower and Upper Lagoon Silts of Cushendun, etc. (Horizon 2). This fact is attested by the presence

¹ *E.g.* Glenarm 1; H. L. Movius, *op. cit.* (1937), pp. 209-10.

in the Argyll industries of such artifacts as gravers, micro-burins, trimmed obliquely truncated flakes, and, most important of all, a pick very strongly suggestive of Forest Culture. Apart from the few objects mentioned, which so far have not been identified among the Early Larnian products of Northern Ireland, it is in this facies that all our own artifacts find exact parallels. We may, therefore, on the evidence collected in Antrim and Argyll, regard the Campbeltown lithic material as expressive of a culture-phase somewhat later than Movius's Horizon 2 of the Irish Early Larnian, wherein the influence of Forest Culture has not yet been detected. The testimony of the Argyll beach, too, suggests that this Baltic influence was in reality more widespread in Scotland, even in relatively Early Atlantic times, than has been thought.

We scarcely envisage the continual arrival of bands of colonists, each one with its own industrial traditions, but rather the coming of people with a hybrid lithic culture composed of elements acquired by contacts and devised by necessity. Still, it also appears that from all the different cultural elements mentioned the beach-folk developed a provincial culture of their own. Further, the similarity in facies of the industrial groups proclaims that the communities on the Argyll and Antrim sides of the North Channel had the same needs bred of analogous conditions during the submergence in the Atlantic climatic period.

The raised beach industry of Campbeltown may, therefore, be said to comprise a specialized equipment, and, though deriving basically from the English Upper Palæolithic (Creswellian), it shows features of other cultures. As we have suggested, it is thought that some forms were dictated by requirements and evolved locally.

11. DEVELOPMENT OF MESOLITHIC RAISED BEACH CULTURE.

Because of changing climatic conditions, the cultural trend towards the end of the Irish Mesolithic is, we know, to heavier equipment. This is illustrated by certain flake-implements and more particularly by core-tools such as the typical "Larne axe," forms which may well point to the farther extension of Forest Culture. Research in Scottish littoral deposits, however, is not sufficiently advanced to permit us to assess the full significance of some objects from the raised beach on our side of the North Channel, which suggest the penetration of Baltic shapes and methods.

A factor too important to be ignored in South-Western Scotland is the dearth of material suitable for the manufacture by flaking of the larger tool-types such as occur in Irish Late Mesolithic industries. Nevertheless, there are indications which suggest that evidence of similar development in Scotland ought to exist. In this connexion, the relatively

large, thick, rolled, and often deeply porcellanized flints, which from time to time have been collected from the surface of the so-called 25-foot raised beach on our seaboard, invite investigation.

The large bone and antler tools and hybrid barbed points from the Argyll islands and caves definitely indicate such development after the maximum transgression, even as they mark the advance of Baltic Forest Culture. The writer may mention his own discoveries of flaked stone tools with tranchet-like cutting-edges, and his recognition of core-tools among surface-finds from Loch Lomondside and the Tweed valley. These objects, however, by their associations are assignable to late stone industries (probably belonging to an early metal age),¹ although the implements are certainly made in the tradition of Mesolithic prototypes, of which the raised beach and other deposits of the West may yet be shown to contain numbers.

So far, then, as we read the archæological and other evidence afforded by discoveries on the Irish and Scottish seaboard, it appears that, whereas the Early Mesolithic industries of the raised beach in Antrim and Argyll may be grouped together, different finds from West and South-Western Scotland point to the existence of two approximately contemporary facies in our Late Mesolithic culture. One of these would be marked by its lithic products, as in Ireland (? Late Larnian), and the other is distinguished by its bone and antler tools and hunting-gear, for which facies Movius proposes the name *Obanian*.²

The field of research offered by the Littorina or Atlantic raised beach in Scotland is virtually untouched, and its archæological possibilities are far indeed from being tested. We are, therefore, fully confident future inquiry will show that on our coasts the Mesolithic industries boast a wide distribution. It may be, too, that the Scottish contribution will eventually prove as informative as the quota furnished by Northern Ireland.

In the present state of knowledge we have no means of ascertaining how long the exponents of our early littoral culture survived. It is fairly sure, however, that these folk could offer little resistance to the "Neolithic" invaders with a full culture,³ whose spread is attested in this apparently favoured region comprising the western shores of Arran, those of the Solway Firth,⁴ and both sides of the North Channel.

12. SUMMARY AND CONCLUSIONS.

A.—At Campbeltown relics of a stone industry are distributed throughout the upper part of the raised beach deposits, but locally they

¹ *Trans. Glas. Arch. Soc.*, vol. ix., pt. iv. (1939-40), p. 328; and *Proc. Soc. Ant. Scot.*, vol. lxxiv. pp. 6-10.

² *Op. cit.* (1940), p. 76.

³ See V. Gordon Childe's "Neolithic Settlement in the West of Scotland" in *The Scottish Geographical Magazine*, vol. 50 (January 1934), pp. 18-19.

⁴ Finds of core-axes mentioned in *Mem. Geol. Survey, Carlisle and Silloth* (1926), p. 79.

are concentrated. They originate from shore occupation-sites dating back to the period of rising sea-level, and they were incorporated into the beach formation during the emergence.

The rolled and/or heavily patinated condition of some of the lithic products suggests they are older than their unscathed companions; yet no typological difference whatever can be detected between the altered and unchanged artifacts.

B.—Though flint, derived from the chalk of Northern Ireland and imported into Argyll, went to the manufacture of most of the artifacts recovered, local native rocks were also employed. Thus, quartz was very freely used and a few implements were fashioned in schistose grit.

C.—All the artifacts are of pre-Neolithic character, there being a complete absence of elements suggestive of true Neolithic culture among the industrial relics from the Campbeltown raised beach deposits. For these reasons, and because of geological and allied ascription of the raised beach on both sides of the North Channel to the Atlantic climatic period, the collection assembled by McCallien is assigned to Mesolithic culture.

D.—The Campbeltown industry may be grouped with the Mesolithic of Northern Ireland, called *Larnian* by Dr Hallam L. Movius, jr., to designate the Early Post-Glacial culture so typically represented at the Curran, Larne, and at Cushendun, Co. Antrim.

Our Scottish series most closely resembles the Early Larnian from Movius's archaeological Horizons 1 and 2 at Cushendun, and more particularly the second (the gravel intercalated between the Lower and Upper Lagoon Silts of the Antrim raised beach) with its distinctive tool-forms which find exact parallels in McCallien's and Gray's collections.

E.—The Argyll artifacts, like those referable to the Early Mesolithic group of Antrim, have their ancestry in the English Upper Palaeolithic (Creswellian), and consequently have their roots in the Aurignacian, industrial vestiges of which are retained in the assemblage. The Scottish series, however, is stronger than the Irish in later elements, such as some types met with in the upper layers of Creswell. For example, the micro-burin and forms prepared by micro-burin technique proclaim the penetration of Tardenoisian culture into the Scottish raised beach industry and also that its elements reached Scotland at an earlier period than was formerly suspected.

Although no worked bone was obtained at Campbeltown, the infiltration of Baltic Forest Culture is suggested by a few objects, a small pick being particularly significant. The presence of these different forms also indicates that the Argyll stone industry is culturally more advanced and is possibly of lesser antiquity than the second stage of Movius's Early Larnian, which it otherwise so clearly resembles.

F.—Climatic conditions on the coasts of Northern Ireland and South-

Western Scotland in the Early Post-Glacial period being alike, and human needs being similar, these factors dictated the development of a local provincial culture. So far, only the more complex sections of the Antrim raised beach provide adequate proof of the evolution of this pre-Neolithic culture, but it is confidently expected that future researches in the Scottish littoral deposits will afford equally conclusive evidence.

APPENDIX.

It appears that the Mesolithic industry recovered from the Campbeltown raised beach deposits, which are assignable to Early Atlantic times, antedates the advanced bone and antler industries from the Argyll shell-mounds and caves respectively resting upon and behind the equivalent raised beach. The situation of these shell-mounds and caves points to occupation during the period of emergence in Late Atlantic times following the maximum transgression of the sea; and their archaeological contents prove the deeper penetration of Forest Culture into Scotland.

VI.

MEDIEVAL DWELLING SITES AND A PRIMITIVE VILLAGE IN
THE PARISH OF MANOR, PEEBLESSHIRE. EXCAVATIONS IN
JULY 1939. BY ROBERT B. K. STEVENSON, M.A., F.S.A. SCOT.,
KEEPER OF THE MUSEUM.

Read February 22, 1941.

1. CHRISTISON No. 10.

Scooped Enclosures with several "Floors."

Attention was drawn by Christison in *Proceedings*, vol. xxii., 1887-88, to the numerous ancient sites in the upper portion of the Manor Valley, Peeblesshire, the important forts nearer the Tweed being subsequently described in his *Early Fortifications in Scotland*. Of the sites described in the *Proceedings*, however, he apparently did not visit Nos. 8-10, regarding which he stated on the authority of Mr Linton of Glenrath that they were like No. 7, which he himself visited, but that they were almost ploughed out. In one of them Mr Linton had found a portion of a quern. Actually they are quite unlike No. 7, but do resemble one another closely. Further monuments of the same class exist in the valley: two on the northern slope of Cademuir opposite Kirkton Manor, close together on opposite sides of a burn, at about the point where the hill slope becomes gentler towards the flood plain of the Manor Water (what is possibly a

variant of the type may be found at about the same level, but farther east opposite Bellanridge Farm); one close to the Well Bush spring, Canada Hill; one close to the ruins of Posso; another between Langhaugh Farm and Youth Hostel; possibly yet another 100 yards downhill from Christison No. 8; also one found by Mr Angus Graham half-way up the northern slope of Woodhill, Posso.

The characteristics which these monuments have in common, and which differentiate them from others, can be described briefly. Situated on a sloping hillside, the area marked off by an enclosing rampart or wall is mostly lower than the ground outside. This is markedly so on the uphill side, where the enclosing wall stands on the level of the ground outside and is clearly not meant to be defensible against attack from above. The interior is not uniformly level, but consists of a number of separate level "floors," quasi-circular, arranged in the main in two horizontal rows. The downhill side of the lower row is probably levelled up by terracing. The general shape of the enclosure is oval, usually with the long axis horizontal. Figs. 1 and 2 show some of the variations possible on the common theme.

Such "scooped enclosures," as they may provisionally be called, were noted by the Royal Commission in their *Dumfriesshire Inventory*, under the heading of enclosures to which they attributed the name "birren."¹ The type was more clearly defined in their volume on Midlothian as an "excavated and walled enclosure." "Situated on sloping hillsides, they are generally hollowed out on the higher side and walled round the ends and lower margins." Unfortunately no plans were given, the system of "floors" was still unremarked, and (see footnote 4 below) recognition was incomplete. Regarding the purpose of these enclosures it was suggested that "they may have been homesteads or possibly medieval 'birrens' used for the concealment of stock."

The limits of the distribution of monuments of this class have not been ascertained. They occur, however, in some numbers at the head of the Bowmont Water² and elsewhere in Roxburghshire;³ round the Gala Water;⁴ near Edinburgh;⁵ in Peeblesshire; and apparently in Berwickshire, and

¹ See *Early Fortifications in Scotland*, pp. 47-9, for a discussion of this word.

² *Early Fortifications in Scotland*, p. 355.

³ Information from Dr Steer.

⁴ In the Royal Commission's *Midlothian Inventory* besides those listed as such, the "fort" above Heriot Station (No. 107) is probably of this class, as are the "fort" at Nether Brotherstone (No. 89), the walled enclosure in Brotherstone Wood (No. 93), and an unnoted, almost obliterated site on the opposite side of the Brothershiels Burn from the "fort" No. 91. No. 91 itself, although seriously damaged by quarrying, like so many of these sites, consists of a very large group of "floors" with remains of a ditch and bank, and may be akin to the scooped enclosures.

⁵ At least two are recognisable in the King's Park, Arthur's Seat: one, rather irregular, at the south-east corner of the Dunsapie Terraces, close to the Queen's Drive, and one at the edge of Duddingston Loch west of the Windy Gowl, a most unusual situation. The "floors" of the latter example seem to have been obliterated by a later road running across the enclosure.

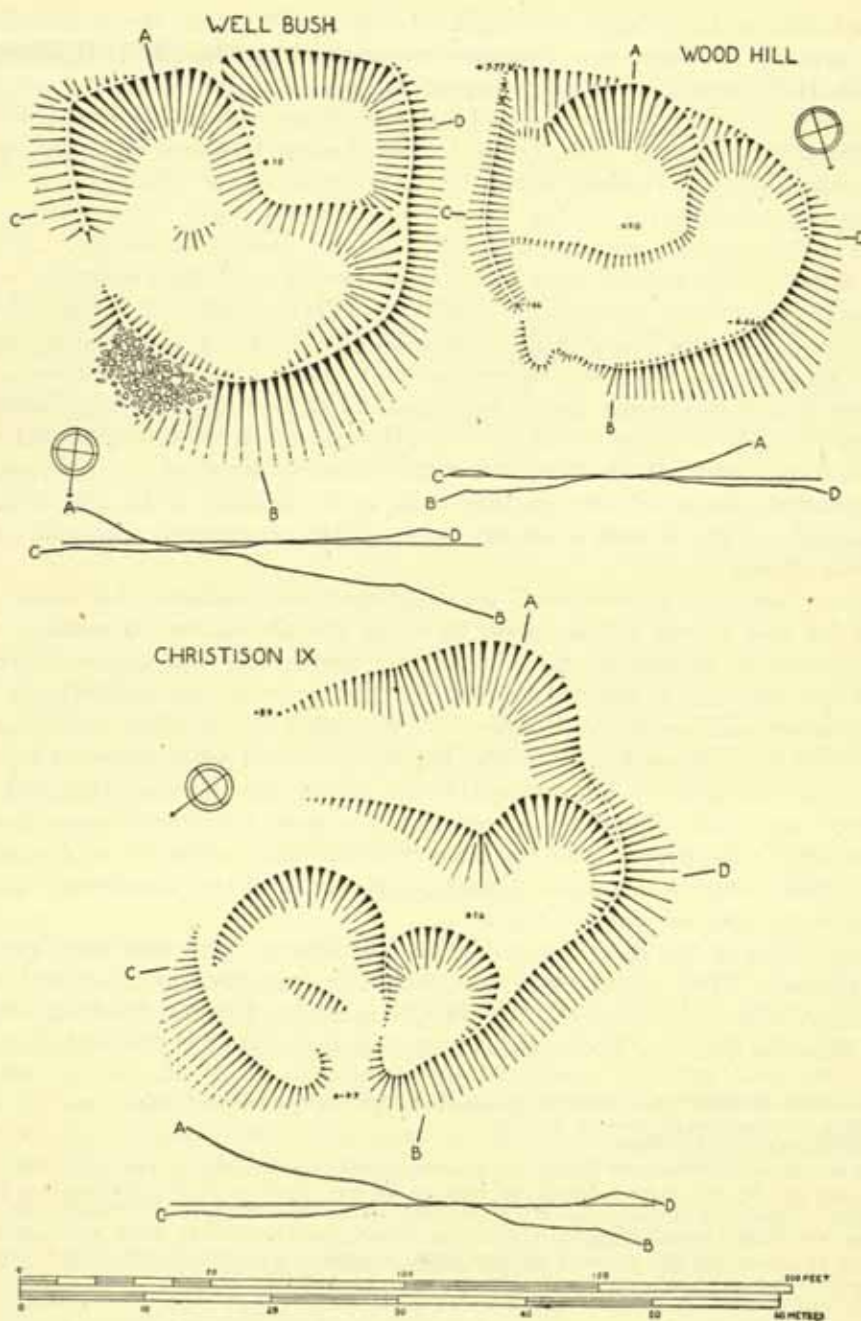


Fig. 1. Scooped enclosures in Manor Parish.

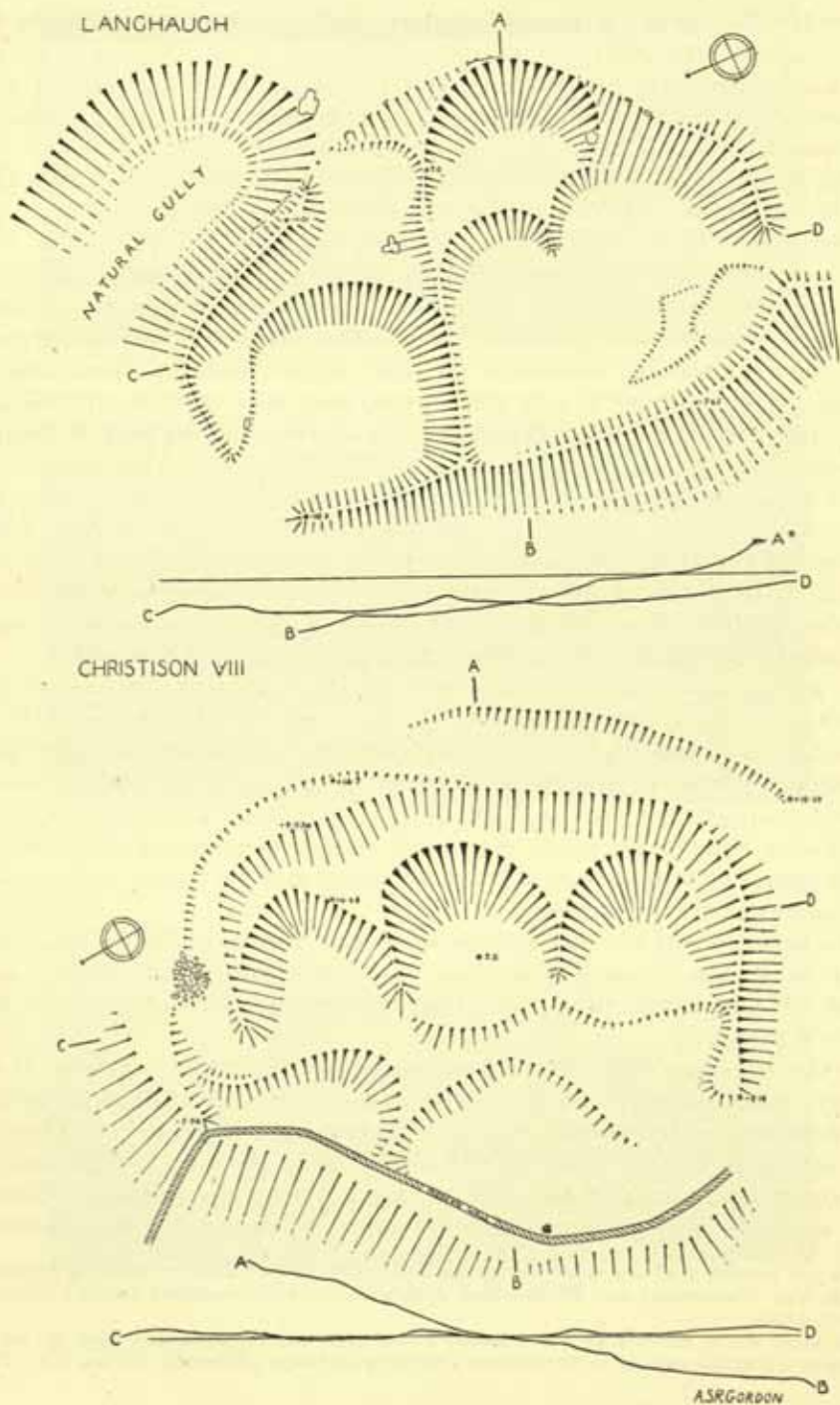


Fig. 2. Scooped enclosures in Manor Parish.

frequently in parts of Dumfriesshire; but are not recognisable in the archaeological literature of Cumberland and Westmorland.¹ Our sites may have a genetic connection with the clusters of egg-shaped scooped enclosures in the Northumberland Cheviots, some of which are said to be Romano-British.²

The size of our scooped enclosures varies considerably, but 100-150 feet may be standard. (In this connection an interesting statement is quoted by Christison, *Early Fortifications*, p. 48, from the *Old Statistical Account* that in Westerkirk, Dumfriesshire, there were many burians of a circular form from 108 to 150 feet in diameter. There was stated to be one near almost every farmstead, generally on the first piece of dry or rising ground.) They are situated on moderate or steep slopes well up from the valley bottom. Concealment is not attempted, and they may command a good view; but they are not defensible from above, and in fact it frequently happens that the hillside just above them begins to rise more steeply. Thus Christison No. 10 is 200 feet above the Manor Water on an exposed spur. A number of examples, e.g. Cademuir and Christison Nos. 8 and 9, lie close to the limit between the improved and unimproved land, arable and hill pasture of the nineteenth century, which may be reminiscent of an earlier limit. They may also be at the same level as, and close to, springs, e.g. Christison Nos. 8 and 10, Well Bush, and near Tinnis Castle.

In some cases there are adjacent to the enclosures traces of former agriculture. Thus immediately at the back of Christison No. 8 there are a number of horizontal cultivation terraces, while an enclosed plot of rectangular shape, 40 by 50 yards, containing "vertical" rigs is joined to the westernmost enclosure on Cademuir by a dyke. Just below Christison No. 10 on a small level piece of ground are the remains of what may have been a pen. It is to be expected that other similar traces will be noticed in connection with other sites.

The situation of the enclosures and their number allow us to dismiss, at any rate as a primary function, the "concealment of cattle," and to suggest at the same time that they played an important part in the country's economy.

As the sites are only 200 feet or less above the valley bottom, it seems unlikely that they were used only seasonally in connection with a system of transhumance by people who lived elsewhere in winter. Thus there is an enclosure in the main Tweed valley, and close to the present main road, about half a mile N.E. of Tinnis Castle, near Drumelzier. That they might even so have a seasonal importance is shown by the mention in

¹ It is just possible that two of the enclosures in Glencoin Park, Ullswater, listed by Mr Hay, may be of this type (*Cumberland and Westmorland Antiquarian and Archaeological Society's Transactions*, vol. xxxvi., 1936).

² This type, whose forward part is a hollow rather than a level terrace, is cited by Mr Ian A. Richmond as a possible analogy to St Cuthbert's dwelling on Farne (*Antiquity*, vol. xv. p. 88, 1941).



1. Scooped enclosure, Christison No. 10, from north-east.



2. Christison No. 10: north side of entrance and outer revetment.



3. Christison No. 10, from north.

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1. Christison No. 10: view and section of outer bank with exterior paving.



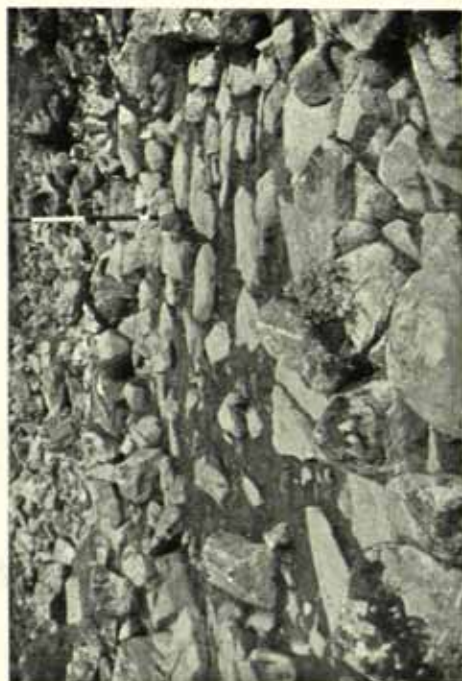
2. Christison No. 10: hearth and quarried rock surface on upper floor.



1. Christison No. 10: Quarried surface of lower floor with some of the levelling-stones (+) and site of possible post socket.



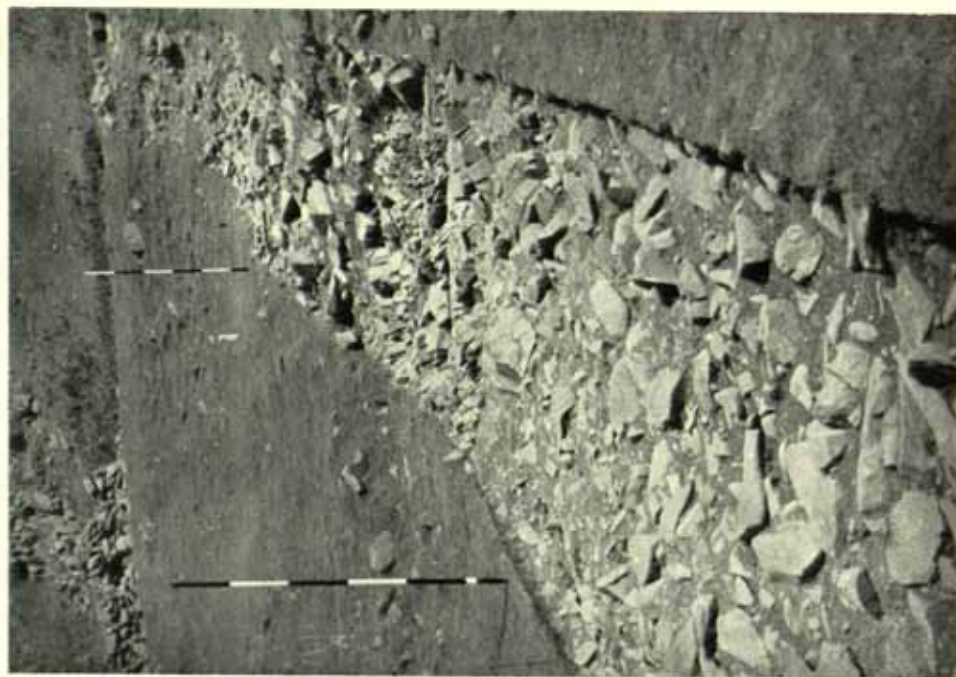
2. Christison No. 10: Terrace make-up, with dark layer, and retaining walling of lower floor.



2. Glenrath hut-circle: interior from south.



3. Glenrath hut-circle: south quadrant, showing paving and pot-boilers embedded in the flooring, and part of courtyard.



1. Christlison No. 10: main cut in course of excavation.

sixteenth-century documents of a shiel or summer house on Cademuir. (See Appendix.)

The close and even spacing of these enclosures, in particular the series Well Bush to Posso where there are six within a mile and three-quarters, suggests a division of land, perhaps ground owned by larger holders divided up among tenants or cottars. (See I. F. Grant, *Social and Economic Development of Scotland before 1603*, pp. 293 ff.)

The internal divisions of the scooped enclosures are fairly regular in size, about 30–40 feet in diameter and not clearly differentiated in function. This, the absence of obvious communication between the floors, the scarcity of well-marked entrances to the enclosures themselves, as well as the large amount of labour obviously expended on the construction, argue for the almost exclusive use of the enclosures for human habitation, at most shared with a few sheep.

Excavation of Christison No. 10.

As the class of monument we have been considering did not seem to have been sharply differentiated from other types of enclosure, as there were so many examples in the Manor Valley, and as there seemed to be an increasing interest in the various monuments of uncertain but probably varying date termed, apparently rather loosely, "homesteads" in the North of England, it seemed very desirable that one should be investigated by partial excavation. Accordingly, with the help of a grant from the Society, work was commenced in July 1939 on the example listed as No. 10 by Christison in *Proc. Soc. Ant. Scot.*, vol. xxii. This is a very typical "scooped enclosure" (Pl. XXV, 1 and 3), situated on an exposed spur on the north side of the Hopeterrick Burn opposite Hallmanor, at about 1000 feet O.D. It was chosen because the plough had never come near it, unlike most of the others. In consequence no accumulation of transported and disturbed soil would have to be removed, and, further, projecting stones hinted at the character of the enclosing wall and of some of the subdivisions of the interior. In addition there was a well-marked entrance. The plan in fig. 3 is clearer than any description.

Main Cut.—An eight-foot wide cut was made across two of the floors and continued to cross the enclosing wall at about its highest and lowest points (fig. 4). The detailed description of the cut follows it downhill from the outer edge of the enclosure. It was found that at the top end a stratum of moderately loose light-brown earth with small stones, apparently natural, had been cut into by a shallow trench which sloped down gently for 3 feet, with a steep scarp on the downhill side originally 9 inches deep but increased by the upcast which, however, was not, strictly speaking, stratigraphically distinguishable. Underlying the brown stony stratum was the hard yellow "till." Against the steep side of the trench large

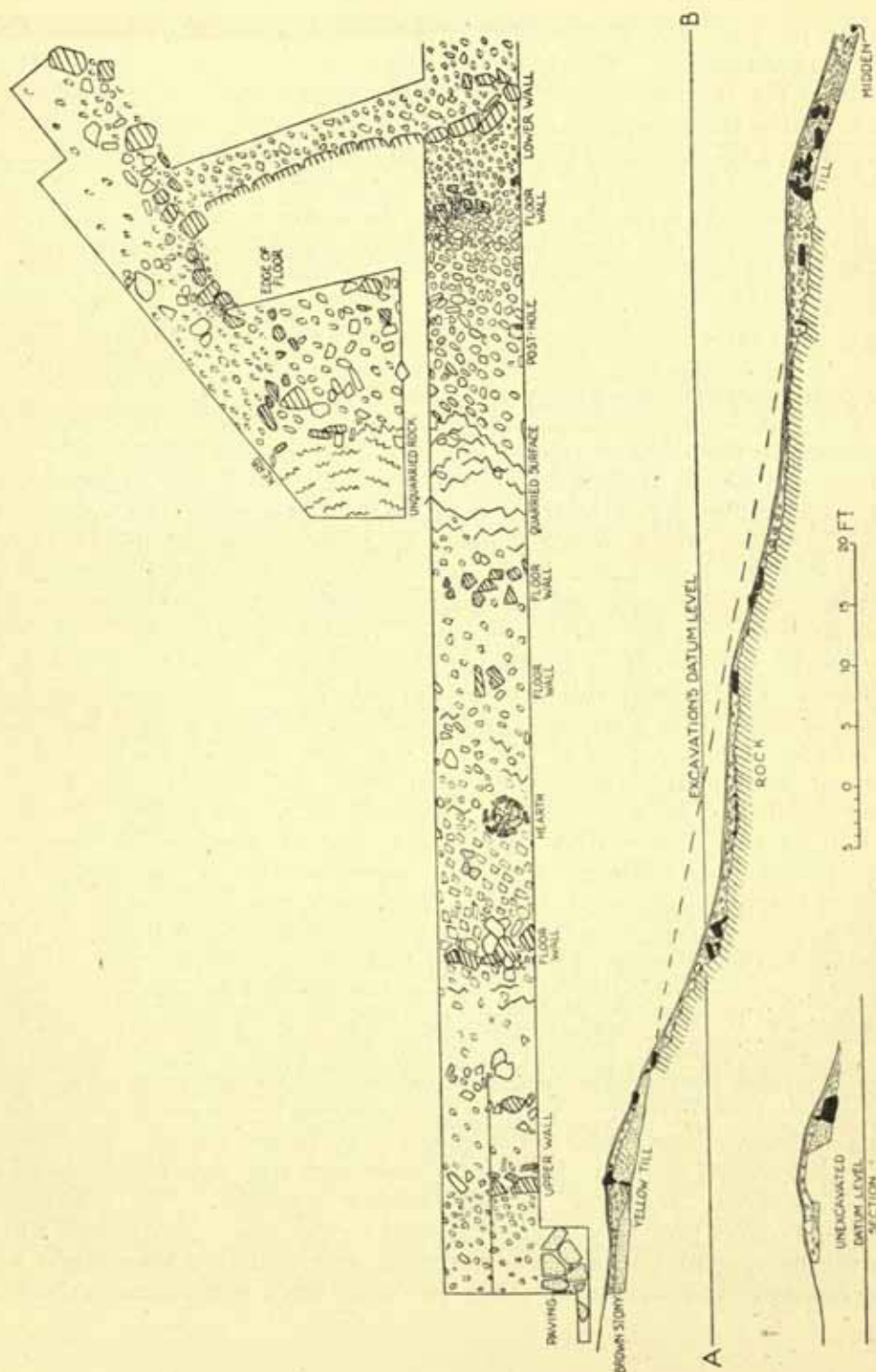


Fig. 4. Plan of excavations at Christison No. 10, and sections of main and north-east cuts.

wall on the north side of the cut (p. 106 *infra*), makes this a point requiring future investigation. The bank of rubble is more likely to have been make-up for the secondary "floor." The brown stony bank was 6 feet thick behind the revetting, and to a depth of 6 inches below the turf was capped by a layer of more humic material containing stones. This capping is uneven and the scarcity of its stones puzzling. Nevertheless it might be the remains of a rubble core; for on the inside of the bank some larger blocks, among which those that may have slipped slightly could not be distinguished from those *in situ*, were clearly vestiges of an inner revetting some of which, along with the rubble that it had retained, had slipped down the slope. The inner edge of this enclosing wall, which is unlikely ever to have been very formidable (see below), practically coincided with the point where the scooping process had begun.

The greywacke had been quarried, giving a jagged face some 18° steeper than the slope of the till, which higher up had overlain it. After a drop of 6 feet in 10 feet the constructors of the site had quarried fairly horizontally for 22 feet to form a "floor." Large blocks set against the quarried slope, which at the bottom was nearly vertical for 18 inches, show that the floor had a back wall, from which rather than from the enclosing wall the really rather small quantity of tumbled blocks on the floor may for the most part have come. On the forward edge of the floor two blocks, headers, lying in the middle of the cut, were the only signs of building. The rubbed side of one showed that it had previously been used for some other purpose. At the side of the floor a slight but sharp drop to the adjacent floor to the south was very stony on the surface, but was not sectioned. Half-way between front and back of the floor an open hearth had been carefully constructed on a very slightly depressed portion of the rock surface (Pl. XXVI, 2). It consisted of some flat paving-stones and some smaller stones surrounded by a low circular kerb with an overall diameter of 3½ feet. The whole was reddened by fire, but there were no traces of peat, charcoal, or occupation, on or beside it. The thinness of the covering of earth, only 6-9 inches including turf, over the old level of the floor, allowing of leaching of the soil by rain action, may, as suggested by Miss Keef, explain the lack of occupation soil both here and at other points. Elsewhere on the floor practically nothing in the way of paving covered the jagged projections of the quarried rock, which had merely been evened up roughly by spreading brown earth with quarry chips and some subangular scree stones 9-18 inches across. The freshly quarried material no doubt had for the most part split into pieces too small to be used as "levellers" or as building material. The subangular "levellers" were probably to give firmness to the loose stony spread which was the flooring proper, and the workmen suggested that they might also have assisted in the drainage. Only two small finds were made on the floor

just described: an iron nail from the region of the hearth, which is like the larger nails from the lower floor; and a small subrectangular sliver of burnt greywacke, about $\frac{3}{4}$ inch across with a hole $4\frac{5}{8}$ inch in diameter bored not quite in the centre and countersunk on one side.

From the forward edge of the floor the quarried rock sloped down once more, dropping $3\frac{1}{2}$ feet in 9 feet, the last foot being almost vertical. A number of blocks scattered on the lower third of the gentler part of this slope must represent a piece of walling, but it was not determined which, if any, were footings actually *in situ*. The general plan suggests that the narrow area between this walling and that bounding the upper floor was used as a passage to the floor north of them.

The lower floor was backed simply by the sharp rise of the quarried face surmounted by the walling, both referred to in the last paragraph. In front of this the rock bottom of the floor was quarried level for about 5 feet, half of which was remarkably smooth (Pl. XXVIII, 1). Beyond this the jagged surface was like that of the floor above for some 10 feet, after which it commenced to slope down gently. A sloping triangular hole in the rock may just possibly have been a post-hole of rudimentary character, as some vertical stones of small size were jammed into the corner, unlike the usual horizontal levelling stones (Pl. XXVII, 1). These levellers were more numerous than on the floor above, particularly on the part of the floor beyond the point at which the rock sloped downwards for the last time. For there the surface had been kept level for a further 15 feet by a bank or terrace of earth and stones, including quarried material, laid on top of the sloping surface of the rock, which was still quarried. The made earth of the terrace was capped with numerous levelling stones, which were, however, too uneven to do away with the necessity of a "loose stony" spread (Pl. XXVIII, 1). The outer edge of the floor, which was thus about 30 feet across, was bounded by a close-set row of header blocks with rubble beyond.

This piece of walling continued round to form part of the edge of the south side of the floor. Here an area was excavated, leaving a 2-foot balk between it and the main cut. It was found that the rock at the back of the scooped floor curved round, and was left as an unquarried boss, on which, however, there was no till: the surface was slightly yellow and friable and consisted of tiny jagged pieces, contrasting with the more irregular and less finely fractured quarried surfaces. Where the boss met the layer of levellers on the floor, several stretchers may mark a line of construction. A number of the levellers were larger than the rest and might rather be interpreted as disturbed walling, for the walling on the edge of the floor did not reappear definitely in the area, although a number of fair-sized blocks nearer the outer edge were probably the remains of walling. No sign of any door or other entrance, no space free of large stones, was

found. A more definite row of blocks occurred as a concave edging to the floor at the point where the ground started to drop quite sharply to the entrance.

The main cut was carried down for half its width through the made-up terracing to the rock. The quarried rock face sloped down, falling 2 feet in 10 feet. Into this face a post-hole had been cut, 1 foot broad at the top and 7 inches at the bottom, to a depth of about 10 inches, its bottom being about 1 foot 4 inches below the level of the flooring. Unfortunately it is not known whether the levellers were interrupted above the hole. The small size of the hole shows that it had been made, and the post erected in it, before the made earth was laid. Into the post-hole, against its downhill side, a flat screestone 1 foot 1 inch high had been packed vertically. There were also several smaller quarried and non-quarried packers, but stones and earth had loosely fallen in so that looseness was the only difference between the filling and the surrounding made earth. This post-hole had been rather to one side of the floor.

Then the rock gave place to till as the natural, and this ran with a fall of only 6 inches in 8 feet before sloping down steeply. The walling at the edge of the floor was found to overlie blocks buried below the surface. One was very massive and rested directly on the till. Beyond it were blocks of more normal size, those nearer the surface forming a regular coursed wall of headers, about 4 feet thick all told. The rather dirty coloured earth among the lower of these blocks was continued on the inner side of the massive block for some 2 feet, where there was a marked line of cleavage between it and the normal light-brown made earth of the terracing (Pl. XXVII, 2). It would thus seem that a trench had been cut parallel with the walling, and indeed it had penetrated 6 inches into the till. Time did not allow of sufficient examination, and some further excavation is needed at this point also. Buried in the dump or terracing of stony light-brown made earth a foot short of the supposed trench were some large blocks. These, taken in conjunction with the trench, suggest that we have to allow for more than one constructional period; for the levellers of the flooring covered both uninterruptedly.

Further indications pointing in the same direction were given by the outer revetting of the enclosure wall. The buried walling at the edge of the floor, besides retaining the terracing, marked the inner edge of the enclosure wall, the core of which was formed of small rubble. This rubble was revetted on the outside by a row of massive blocks, up to 3 feet by 2 feet in the face and over 1 foot thick. But these blocks rested on a stratum of unmistakable midden earth that commenced just outside the inner line of walling, but may be associated with the dirty earth previously mentioned. This midden deposit was up to 9 inches thick and stretched several feet outside the revetting. It was continuous right round to the

entrance of the enclosure. In the main cut, and there only, several large blocks lay in front of the revetting, on and bedded into the midden. As the revetting was irregular at this point, they may be supposed to be subsequent buttressing. The midden appeared to rest directly on the till.

Finds.—The only finds made in the midden, although we cleared a trench three feet wide along as far as the entrance, were a broken pounder of quartzite of the kind formed of a fairly large waterworn pebble with one end flattened into two or three smooth facets, a pot-boiler, and some tiny fragments of ruddle. There were also a few bones, representing pig, ox, young sheep, a fragment of bird's wing, and the ulna of a young rabbit, besides some charred fragments.

The finds from the level of the lower floor were fairly numerous; but the fact that almost all came from the loose stony layer some 4 inches thick, which besides being the floor level was also immediately below the humus, indicates a risk of contamination. The number may be held, however, to show that most were hardly fortuitous, so that an exhaustive list is given.

Chiefly on the lower floor, but some also inside the entrance, over a score of potsherds were found. Many, however, were very small, and there were no rims and bits of only two bases. Mr G. C. Dunning thinks they are very late medieval, fourteenth or fifteenth century, if not later.

"The extremely hard thoroughly fired ware, flat base, and pale green glaze present on the inner surface of some sherds, all suggest a late date." Most are pink or grey in colour, varying slightly in smoothness of texture, with a buff slip and traces of lead glaze chiefly grey-green or dull red in colour. The only sizeable base was flat with sharply expanding sides (fig. 5, 3), and had an estimated diameter of 6 inches; the other may have been similar. The only sherd found deeply stratified, in the make up of the terracing but only an inch or so above the edge of the post-hole, is of precisely the same quality as the larger piece of base, which was found 5 inches above it. One sherd was of a completely different ware, being light brown in colour, slightly sticky to the feel, and with a faint smell like that of a new clay tobacco pipe. Part of the curve of the neck

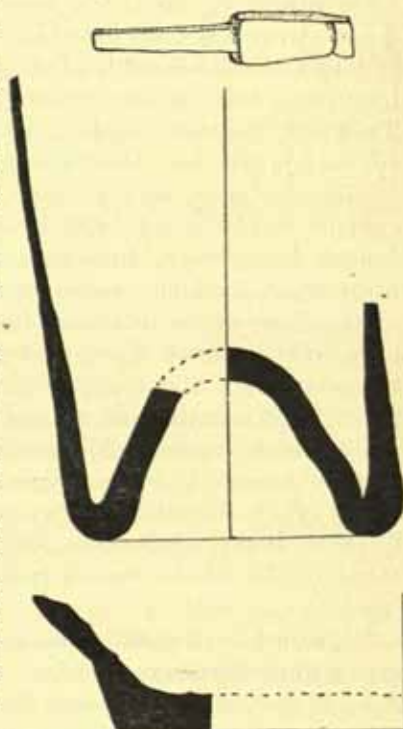


Fig. 5. Fragments [from Christison No. 10: iron knife; glass bottle; jug. (4.)

was recognisable, bearing a horizontal fluting. There were no traces of glaze.

A dozen iron tackets of various sizes were scattered all over the lower floor in the "loose stony." One has a round domical head $\frac{3}{8}$ inch across with a straight stalk $\frac{7}{16}$ inch long. Five have roundish heads, only slightly domed, $\frac{3}{4}$ inch and less across, with a square stalk which begins to bend after about $\frac{3}{16}$ inch: in one case it is bent sharply in and continues for $\frac{1}{4}$ inch to end square just short of the edge, while in another it curves down gently after the bend till it ends $\frac{1}{4}$ inch below the edge. Three are squarish-headed, $\frac{5}{8}$ inch across, with stalks broken off too short to see if they bent. Two are irregular headed, about the same size, with thick squarish stalks ($\frac{3}{16}$ inch), running fairly straight, one for half an inch.

At the edge of the floor, close to the unquarried boss of rock, in a crevice down into the rock and partly under a levelling stone, there was found part of a broken iron knife (fig. 5, 1). The tang, which was uppermost, and the solid stop almost 1 inch long, with a small fragment of the base of the blade, were all that remained, but showed it to be part of a table-knife of the type current in the fifteenth and sixteenth centuries, to judge from the complete specimens in the Guildhall Museum, London, most kindly explained to me by Mr Waddington. Nine hand-made iron nails had squarish stalks and the head hammered down to an irregular square about $\frac{3}{8}$ inch across. The longest stalk is $1\frac{1}{2}$ inch long and about $\frac{3}{16}$ inch thick. Two may have had broader wedge-shaped stems $\frac{3}{4}$ inch long, while two others are smaller nails with thinner stalks. In addition there was a piece of knife-blade and a shapeless piece of iron.

A number of small blocks of stone, including greywacke grit, from the lower floor had been rubbed smooth on one face, probably as whetstones. Also of greywacke grit was the butt-end of a hone about $1\frac{3}{8}$ inch broad and $\frac{5}{8}$ inch thick, with a rounded tapering unrubbed grip $1\frac{3}{4}$ inch long; what might possibly have been the other end of the same hone was a triangular fragment $2\frac{3}{4}$ inches long. A very peculiar piece of stone $4\frac{1}{8}$ inches by $1\frac{3}{4}$ inch by $\frac{3}{4}$ inch, probably a fine-grained greywacke, but now of a rich brown colour and shiny all over as if much worn by handling, has one long narrow side highly polished. In the make up of the terracing was a flattish oval pebble about $3\frac{3}{4}$ inches by 2 inches by $1\frac{1}{8}$ inch battered at one end, and also ground flat and very smooth along one of the narrow long sides giving a surface $2\frac{1}{2}$ inches by $\frac{3}{8}$ inch covered with fine scratches oblique to the long axis. It had been held in the hand and used for rubbing in much the same way as the shiny brown stone.

A considerable number of tiny fragments of ruddle or "keil" were scattered about. A couple of small lumps of "keil" show signs of use: one, $1\frac{3}{4}$ inch long and 1 inch broad, had been rubbed flat on one broad

face, while the other piece, $1\frac{1}{4}$ inch long, had been rubbed to an irregular six-sided figure, each side showing distinct striæ.

Finally, a considerable quantity of bottle glass was found, chiefly in the southward extension of the main cut, and quite an amount of it on the unquarried boss of rock. This suggests a difference in date from the other finds, although some pieces occurred at 4 inches below the turf. At least three bottles are represented, one olive-green with numerous bubbles, the others browner and a little thicker. The two qualities were found mixed up together. One of the bottles had been comparatively straight-sided, though off the plumb, with a high kick in the base (fig. 5, 2). Another may have been onion-shaped. No bits of neck were found. Mr W. A. Thorpe dates the fragments to about the early eighteenth century.

Entrance.—Half the entrance of the enclosure was also examined. The line of revetting blocks turned inwards at the hollow that marked the entrance superficially (Pl. XXV, 2). A number of tumbled blocks in front of them indicated that here there had been more than one course of revetting stones. No roadway was recognised, and the steep passage-way—rising in the entrance $1\frac{1}{2}$ foot in 7 feet—must have been pretty stony. A knob of unworn rock in the centre is only 4 inches below the top of the turf, and gives the best indication of where the original surface ran. Down from the line of stones which edged a passage-like extension of the lower floor, there was a level represented by specks of charcoal among the earth between the stones that formed a steep drop to the entrance, from which we may assume that the steepness is original, although the excavation was not continued there down to the natural.

Outside the entrance, on its north side, a ragged semicircle of blocks (Pl. XXV, 2), ending in a particularly massive stone 18 feet away, bounded the approach, which runs up a hollow between two small natural spurs. On the other side of the approach there was no such boundary walling, but rather what was at first taken for a ditch debouching from alongside the enclosure wall. One of the workmen, however, pointed out that it was the end of a path that had run round the south side of the enclosure and continued along the contour of the hillside eastwards towards the Hope-terrick Burn, and which perhaps ultimately led to Christison No. 9.

North End.—Two further points inside the enclosure were examined, both at the north end. The general plan suggests that this north part, consisting of two big floors, is an annexe tacked on to the original enclosure, which would, in that case, have been more nearly circular: for not only are there kinks in the east and west sides of the oval as it is now, but the whole northern part stands up clearly and its upper floor is divided off from the main part of the enclosure by a very massive bank (now crowned by a ruinous wind-break dyke) which might well have been the line of an original outer wall. This suggestion also provides an explanation for a

triangular space between the lower floors, that has no apparent function, but which might be a piece left unused when the curvilinear annexe was added to the more circular enclosure. A small area 14 feet by 4 feet was cleared in the upper floor of this northern annexe, where the grass was much greener than in the main part of the enclosure and where there was some bracken. A humic layer extended to 6 inches below the top of the turf, and then there was a layer 2 inches thick containing a few stones, followed by the till. There were no levelling stones to suggest that there had been a flooring as on the other floors examined.

At the north-east end of the annexe a cut was made across the enclosing wall at its most prominent point. This showed a very massive revetting block on the inside with some smaller stones on edge in front of it, and yellow earth banked up behind it. On the yellow earth was a stony capping which became somewhat thicker as it sloped down on the outside, where despite some scattered blocks no revetting was found. The wall was thus analogous at this point to that at the top of the main cut, the revetment having been possibly robbed. There were no finds in this part of the enclosure.

Outside Floors.—A final development in the excavation was the discovery that just north of the edge of the top of the main cut there was a fine close-set massive paving, quite unlike anything that had so far been found (Pl. XXVI, 1). This was then seen to explain the strange flatness of the ground immediately above the enclosure, for it belonged to one of two very shallowly scooped and inconspicuous floors that lay beyond the enclosing wall. The plan suggests that they were a later addition.

Conclusions.

The excavations so far, although one or two vital points which bear on the appearance of the structure in the period of its occupation still require examination, confirm the deductions reached at the beginning of this paper. The enclosure had been elaborately constructed by quarrying the rock and heaping up a terrace. The several floors had been surrounded by walls. Although neither Christison No. 10 nor any other site in the valley seems likely to furnish proof of the original character of these walls, it must be supposed that they rose to some height, sufficient, at least in the case of the upper floor with the carefully constructed hearth, to have carried a roof. The midden, with the remains of three kinds of edible domestic animals, and the potsherds from the lower floor, also confirm the supposition that we are dealing with a dwelling site. The hones, fragments of ruddle, and the utilised stones are the only evidence of the inhabitants' activities. The quern found by Mr Linton, though its type and the site from which it came are unknown, must not be forgotten. The picture that presents itself at present is thus one of a cluster of quasi-circular

huts, with their roofs borne on more than one post, surrounded by an enclosing wall to keep livestock from intruding; along the upper edge of the enclosure the wall and ditch served also to divert rainwash, as has been suggested in a similar instance by Lady Fox (see below).

Although the midden of the first period contained no dateable relics and although sherds were not recovered from the upper floor, the sherds and knife may be taken to indicate that the enclosure was in full working order in the fifteenth or sixteenth century. The bottle glass may be rejected as intrusive.

The records of travellers, collected in Hume Brown's *Early Travellers in Scotland before 1700*, agree in describing the dwellings of the people of southern Scotland as very rude, with roofs frequently of turf or heather coming down so low that sheep could graze on top of them. Although the shape of these dwellings is not apparent, our site does not by comparison with these descriptions seem to have been so primitive as to render doubtful the date indicated by the finds.

An earlier date might, however, be suggested for the fine scooped enclosure at Langhaugh constructed to take advantage of a deep natural gully; for it is of a nature strongly contrasting with the complex of square and rectangular foundations a few yards on the other side of the gully which seem to focus on the foundations of a small square tower, presumably one of the series of medieval watch-towers mentioned in the *New Statistical Account*. The tower and houses at Langhaugh were in existence in 1560, when they are mentioned as being the subject of a dispute.¹ A similar juxtaposition at Posso strengthens the argument. The settlement with the tower might in each case be as it were the successor of the enclosure. It is of interest in this connection that on the Bowmont Water a scooped enclosure entirely typical as regards position, size, and constructional method is called the *Peel of Mow*.² In any case it seems probable that this class of structure had a long history.

Certain features of other recently excavated structures which were occupied during the thirteenth and fourteenth centuries are of importance for comparison, since one case gives some support to the interpretation of our "floors" as the remains of circular dwellings, and the other extends the field of inquiry.

A cluster, on level ground, of four irregular curvilinear buildings impinging on one another and each from 30 to 50 feet across, of which one was apparently a dwelling, was investigated at Askerton Park in north Cumberland by Miss K. S. Hodgson.³

The quarrying and terracing technique was employed in preparing the

¹ *History of Peeblesshire* (ed. Walter Buchan), 1927, vol. iii. p. 562.

² Information from Dr Steer.

³ *Tr. Cumb. and West. A. & A. Soc.*, vol. xxxix., 1939.

sites for long rectangular houses forming a "homestead" on Gelligaer Common, Glamorgan. This feature is discussed by the excavator, Lady Fox, in *Archæologia Cambrensis*, vol. xciv., 1939. She concludes that "it is conceivable that these 'platform' buildings will be found to represent a technique characteristic of the Dark Ages and medieval periods in Wales."

Other variations in Peeblesshire of the same technique should perhaps be mentioned here. Two groups, each of half a dozen single "floors," one on the east side of the Green Knowe and the other on the northern lower slope of the White Meldon on the opposite side of the Meldon Burn, seem similar to the "hut platforms" found as far afield as Glendalough, Co. Wicklow, as described in *Journ. Roy. Soc. Ant. Ireland*, vol. lxxviii., 1938 (W. J. Hemp and C. Gresham). A single scooped hollow lies only 50 yards from the enclosure opposite Bellanridge Farm (mentioned on p. 93 above). This enclosure itself is unlike the "normal" scooped enclosure as defined on p. 93, in that a single floor stands up from the rest of the enclosure, thus being similar to the two sites excavated in 1939 near Calroust Farm, off the Bowmont Water, by Dr K. A. Steer. Simple scooping, of course, occurs in Early Iron Age huts such as those in the larger fort on Cademuir.

It may be suggested in passing that certain circular hill-top enclosures, with traces of circular structures, sometimes scooped, and other foundations inside, of the type represented by Christison No. 13 and the site above Easter Dawyck just over the col from Glack Burn (and the analogous valley-bottom site, Christison No. 16), were contemporary with and somehow complementary to our scooped enclosures. A link between the two may be provided by the strong and unusually situated site above the Meldon Burn, close to the small Peebles reservoir, the central area of which has been dug out. This has been done in such a way as to leave along the N.E. quadrant a row of hollows similar to the back of the upper row of floors of a scooped enclosure, and serving the same purpose.

Our inquiry has led so far to conclusions that are inevitably tentative, but which may serve to awaken interest by suggesting that the "scooped enclosures" played an important part in the ordinary life of the Borders during a period the warlike side of which is better known. Perhaps the historians will take up the problems which cannot be solved by field archæology alone.

2. CHRISTISON No. 2.

Glenrath Village.

Besides the "scooped enclosure," trial excavation was undertaken at a further site with the aid of the Society's grant. The object was to widen the scope of the inquiry to a historico-geographical survey of the Manor Valley, which after a couple of years' work should give a picture of how

the valley was inhabited at different periods. It seems, however, desirable to present now the incomplete results it has so far been possible to obtain. For the second site, for the first season, a group of the hut-circles was selected which, as Christison showed, are such a feature of Glenrath. It is quite possible that the whole series of remains lying between the figures 1 and 2 in his map in the *Proceedings*, a distance of almost half a mile, should be treated as a unit. The central third, however, of the "village" which they form attracted attention because there were clearly marked field boundaries running down from the hut-circles to the modern road.

This section (fig. 6) commences at the delta formed by a burn issuing from a gorge in the hillside, it being the first burn on the north side of the glen below the cottage at Glenrath Hope. In the corner between the delta and the steep scree-covered slope there are a series of enclosures, some modified, at least, at a later date, and from their lower edge the first field boundary starts downhill, ending with an unusually crooked course and stopping unexpectedly short. Then a path runs westward fairly close to the edge of the scree, passing a small circle. Some 350 feet west of the burn a ramp slopes down from the path to a subrectangular enclosure in which there appeared to be two hut-circles, and from the S.E. corner of which the next field boundary runs a practically straight course downhill for 250 feet. This enclosure was chosen for excavation. Adjacent, but nearer the scree, is another enclosure, half-moon shaped with a hut-circle raised in one corner. The bottom edge of the lower enclosure forms part of an irregular terrace from which field boundaries start. Of these there are six parallel to one another, marking fields that are on average rather over 100 feet across. In addition there is part of a fainter boundary in the middle of the second last field. Below the terrace at the top of the second of these fields there is a partly terraced enclosure, while at the head of the next field, also below the terrace, there is an oval enclosure with a single hut-circle at one end and an oval appendix at the other. Indications of irregular enclosures and scattered huts continue above the terrace to the last field, above which there begins an upper terrace closer to the scree. In several of the fields there are clearance cairns, some robbed by later stone gatherers and thus hollowed as described by Christison.¹

It would seem that the westernmost third of the village had been very similar to the section just described, to which it is joined by the higher terrace. It has, however, been much disturbed. In particular most traces of the "vertical" field boundaries have been obliterated, presumably by ploughing as indicated by some "horizontal" lynchets of more recent

¹ *Proc. Soc. Ant. Scot.*, 1887-8, p. 196. "Vertical" fields are also to be found opposite Langhaugh, but these have a much fresher appearance and are presumably more recent. They are straighter and obviously terraced, and have, as Mr Graham has pointed out to me, traces of several rigs each. There are apparently no associated clearance cairns.

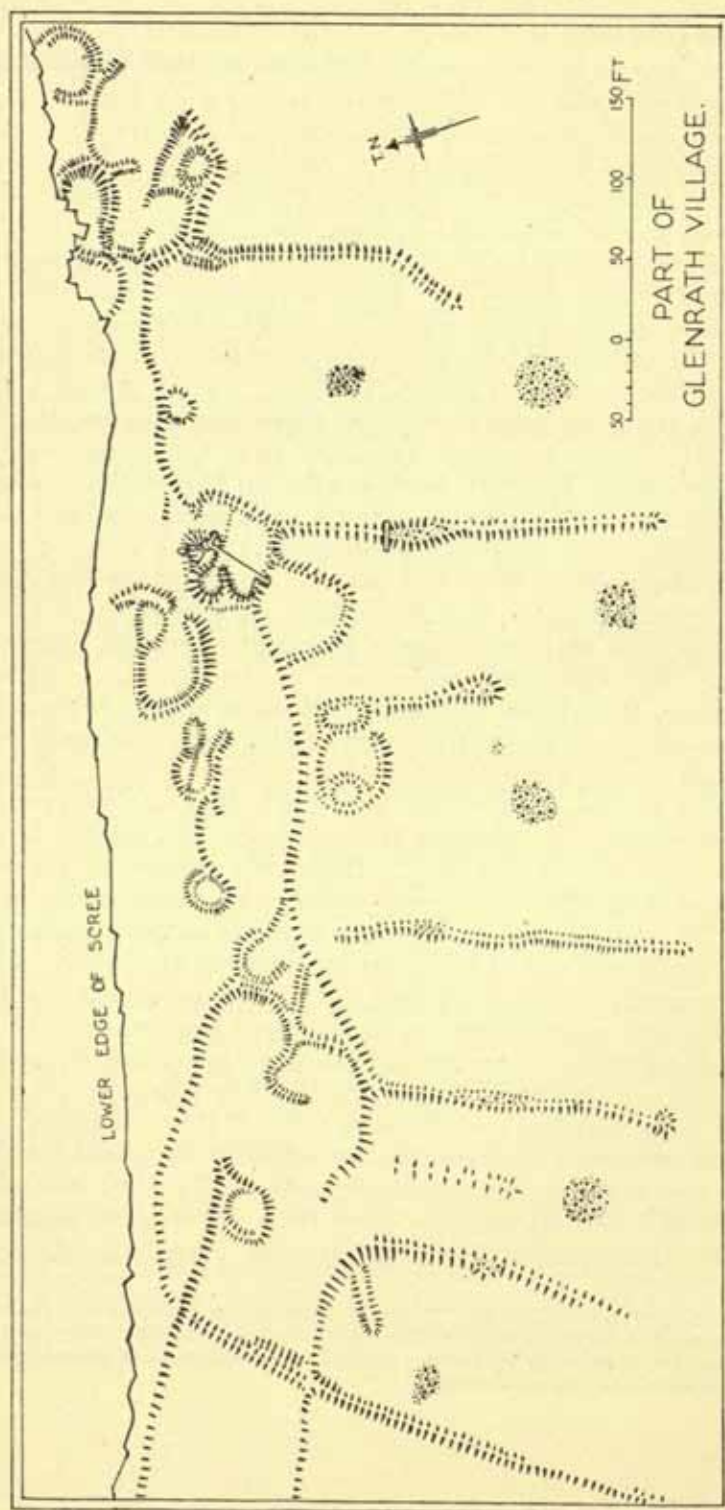


Fig. 6. Part of Glenrath village, showing field boundaries and cairns.

appearance, but quite a considerable number of clearance cairns remain, some clearly deformed by the horizontal ploughing.

The Excavation.

The excavation of the enclosure chosen showed that it, like the two others close by, consisted of a courtyard and a single hut, the second hut-circle proving, as will be explained, illusory. The whole interior of the hut was cleared as well as the top of the surrounding walling (fig. 7). The entrance, which opened to the S.E., was 2 feet wide and paved with two large slabs: one side was unfortunately mutilated by rash excavation. The hut had an internal diameter of 14 feet. The floor first of all ran horizontal inwards for 6 feet, forming a well-paved segment which dropped a foot, however, from right to left. The paving-slabs, like those in the entrance, regularly ran under the inner facing stones. Bounding this segment were several stones sticking up about 9 inches to form, along with some less obviously placed stones, a cross division, rather uncertain at its N.E. end. Behind this line were some small possible paving-stones at a higher level. Another parallel cross division occurred 3 feet away, and bounded a final stony segment that rose to the bottom of the inner wall face. This lay $1\frac{1}{2}$ foot above the level of the entrance. The wall at one point here stood three stones high.

The inner face of the hut wall was formed of a fairly even circle of large stones, in most places only one row high. Next to the lowest point of the paving, beside one end of the main cross division, there was also farther back a poorer course of smaller stones, almost suggesting an ambry, and the large stone of the wall foundation was there hidden by a flooring of earth mixed with a large quantity of burnt water-rolled pebbles, some about the size of one's fist. This flooring had been laid above a couple of unburnt paving-slabs, apparently merely to raise the level of the floor which was here at its lowest. More re-used pot-boilers were also scattered over and among adjacent slabs (Pl. XXVIII, 3).

In this earth flooring was found a spindle whorl, the only find in the hut except some minute specks of charcoal in the same earth. The whorl is made of a piece of whitish sandstone, $\frac{3}{4}$ inch thick and $1\frac{3}{4}$ inches across, the upper and lower surfaces ground smooth and parallel. The edge is roughly chipped and partly ground, sloping in slightly to the upper surface. The perforation (min. diam. $\frac{3}{16}$ inch) is not quite vertical nor central, and is splayed slightly at each end. The sandstone is not local, and the whorl may therefore have been an import, although it might perhaps have been made from a glacial erratic.

The outer wall of the hut to the left of the entrance was traced with some uncertainty, because much tumbled. Indeed after 7 feet or 8 feet it seemed to have gone, and only a rather doubtful line was picked up after

an interval of 10 feet. This line, against which there abutted blocks which seem to mark the inner face of the courtyard wall, was really a continuation of the direction of the first rather straight portion and was not a curve

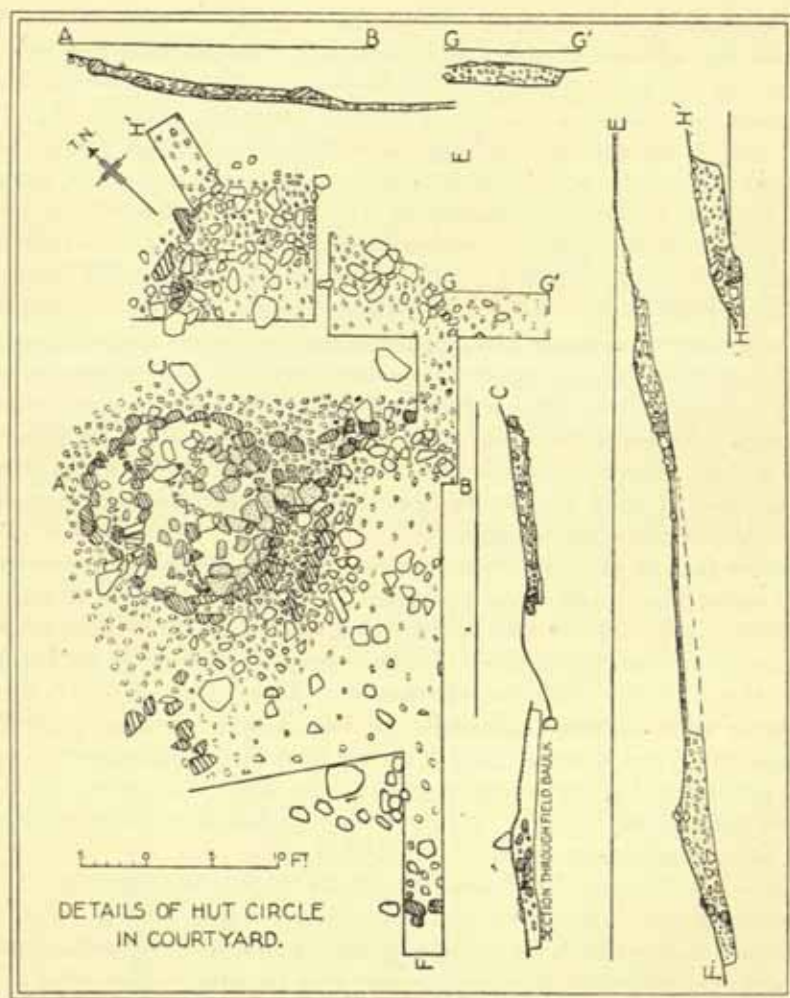


Fig. 7. Plan and sections of excavations in Glenrath.

concentric with the inner wall. The greater part of the outer face of the hut wall had coincided with that of the enclosure wall, which bulged out to correspond to the shape of the hut. This bulge mars the otherwise rectangular shape of the enclosure. We did not section it, however. On the other side of the entrance the outer face of the hut wall met, after 4 feet, the revetment of a stony bank that covered a rise to a higher level.

This revetment continued through the hut wall to the inner face, which then took up its function.

The bank showed that the area above it, a hollow surrounded by a curvilinear walling, was not after all a hut, as there was no way in. This was borne out by further excavation, which produced no satisfactory floor and showed that part of the walling above the bank was a mere heap of stones (fig. 7, section G), whose purpose may have been to head off animals entering the enclosure down the ramp from taking the direct line which, considering the levels, might have brought them on to the roof of the hut. A cut through the enclosure wall where it bounded the upper hollow north of the heap of stones showed that the hard till had been cut back to a depth of 6 inches at a point where it lay 2 feet below the present grass slope. A foot and a half from the cut in the till a revetment had been built and the space between filled up with largish stones, a spread of which at 6 inches below the turf may mark the level at the time of the operation. Inside the revetment was a bank of stones, probably the core of a wall whose inner face had gone at that point, although a few feet away a large block with a row of smaller blocks on top of it seemed to be the remains of such. If this is the case the outer wall would have had a thickness of about 3 feet.

Over part of the courtyard the upper 6 inches was cleared without anything more like a floor being found than a thin scatter of stones, among which at about 4 inches from the surface were some unidentifiable fragments of iron. This was, however, the occupational level, for it was at the foot of the hut's outer face. The lower side of the courtyard, as already mentioned, was a terrace. At the edge a few stones rose as if the poor remains of a wall. Then the banking dropped $2\frac{1}{2}$ feet in 8 feet. A section cut through this showed $1\frac{1}{2}$ foot of earth and stones at the edge of the courtyard overlying the yellow natural till and retained by a revetment of massive blocks now rising $1\frac{1}{2}$ foot, the lowest resting on the natural soil. There were numerous specks of charcoal in the earth of the banking.

A cut at about 80 feet from the corner was also made through the field balk that ran down from the corner of the enclosure (fig. 7, section). On the surface it appeared as a line of scattered blocks and stones, on a slight rise that sloped more to the west than to the east side. It was shown that below the stones visible on the surface there were more numerous stones scattered in the earth to a depth of $1\frac{1}{2}$ foot. They lay on the level that was agreed on by the two local workmen as the base of the tilth, and which had a slope corresponding to surface indications. At 4 feet on either side of the stone balk the depth of the fine stoneless tilth was 1 foot. The depth and lack of stones are surprising.

There is little that can be said in conclusion. The terracing, accompanied by a certain degree of scooping, is a remarkable feature of the whole site and one to which there are no obvious parallels. The village has not

been dated by the trial excavation. It would appear, however, to be comparable in certain respects with the Yorkshire Romano-British villages and fields described by Raistrick in "Iron Age Settlements in W. Yorkshire."¹ It may be significant that whorls of fine-grained sandstone with well-ground flat surfaces are found there.² The subdivision of the hut reminds one of the beehive house actually visited by Sir Arthur Mitchell in the Hebrides, and described by him in *The Past in the Present*, pp. 59-60, where the inhabitants slept in the inner raised portion.

ACKNOWLEDGMENTS.

The owners of the two sites, Mrs St Clair Cunningham of Hallmanor and Mr N. H. Cunningham, and Mr Jas. Stewart, Castlehill, not only most willingly gave permission for the excavations and presented the finds to the Museum, but also greatly facilitated those of us who camped.

The work would have been impossible but for the invaluable services of 23 volunteers, almost all of whom spent a week or more digging and surveying. They included members of the Edinburgh League of Pre-historians, students, and other friends. Particular mention, however, must be made of Miss A. S. R. Gordon, who assisted the supervision during the whole four weeks and took charge of most of the surveying, and of Mr R. Carnon who helped for three weeks. Our Fellow Mrs Alison Young must also be particularly thanked, along with Miss K. S. Hodgson.

Messrs Blacklaw and Sword were employed for two weeks, and much is due to their suggestions and energy.

As already mentioned, Mr G. C. Dunning and Mr W. A. Thorpe have most kindly examined some of the finds from Christison No. 10. I have further to thank Mr Eckford for advice on geological problems, and Miss M. I. Platt for identifying the animal bones. Miss Gordon and Mr Stewart H. Cruden have each prepared some of the plans for publication.

APPENDIX.

The *Extracts from the Records of the Burgh of Peebles* (ed. W. Chambers, 1872) and Mr Walter Buchan in the *History of Peeblesshire*, vol. ii. (1925), tell the troubled story of the common lands of Cademuir, and give interesting details of the "tack" held by William Bell, a burgess and baillie of Peebles in the middle of the sixteenth century. In July 1557 one James Gledstanes of Hundleshope came with accomplices to Cademuir, "striking our servand Robert Cleuch and causing him thairthrow to haif greit effusioun of blude, and takkand to erd our scheillis and houssis, cuttand the samin with hewin axis and suirdis." What appears to be an account of the same incident later tells how Gledstanes came to the Burroleis, one of the lower quarters of Cademuir, William Bell "being in peceabill possessioun of the samin be lawboring manuring of the ground thair of, pasturing

¹ *Yorks. Arch. Journal*, vol. xxxiv. (1939), p. 119.

² *Ibid.*, p. 135.

his gudis thairupone, likeas he and his predecessoris hes bene in semlable possession thair of be the space of lx yeris immediatelie preceding." Then Gledstanes "maisterfullie and violentlie kest done and destroyit the said umquhile William scheill and somer hous biggit upon the saidis landis for keping of his gudis thairupone, and hurt and woindit (*blank*) his hird." At the end of January 1557-8 the eight oxen which formed William Bell's plough yoke were slain in another attack, along with the oxen of three ploughs belonging to other burgesses, one of whom was himself killed. Finally, in July or August 1561, William Bell too was murdered. In his children's claim for damages for these outrages we read of "the hail proffittis quhilkis he mycht haif had of the saidis landis of Burroleis—extending yerelie to lx bolles aittis sawin,¹ estimat to the thrid corne price of the boll with the fodder xxx s.; the proffittis of the pasturing of sax score milk yowes, proffit of ilk pece yerelie in woll lamb butter and cheis extending to sax s. viij d.; the proffit of the pasturing of sax score wedderis, extending ilk pece yerelie in woll and utheris proffittis to iij s. iiij d."

Besides the enclosures already referred to, I have noticed only two or three traces of probable dwelling sites along the northern lower slopes of Cademuir. They may mark the houses built for the seventeenth- and eighteenth-century herds.² It is thus not inconceivable that one of the "scooped enclosures" may have been William Bell's "summer house" and that Robert Cleuch lived there. I should add that Mr Buchan has kindly informed me that he cannot tell the exact situation of the Burroleis, but that his impression is that it was situated on that part of the hill that is opposite Hallyards.

VII.

THE RED CASTLE OF LUNAN BAY. By W. DOUGLAS SIMPSON, M.A., D.Litt., F.S.A.Scot.

Read February 22, 1941.

To an invader seeking to enter Scotland from the east, the broad, sheltered inlet of Lunan Bay, with its fine sandy beach, offered an obvious landfall, and one which would at once admit him to Strathmore and the heart of the ancient kingdom. The site of Red Castle, which dominates the bay, was therefore a most likely spot to be selected for planting a royal castle in the days when Norse aggression was still a danger to be feared. Thus there seems little reason to doubt the correctness of the old tradition which ascribes the origin of the castle to William the Lion, or to reject the statement of a seventeenth-century topographer who reports that the King was staying at Red Castle when he founded the Abbey of Arbroath in 1176.³ Whether any part of the existing ruins goes back as far as that

¹ Indicating perhaps half a ploughgate of land; see I. F. Grant, *Everyday Life on an Old Highland Farm*, pp. 101 and 105.

² Buchan, *op. cit.*, pp. 227 and 233.

³ Macfarlane's *Geographical Collections*, vol. ii. p. 44.

time is quite another story. Most probably William the Lion's castle, like other Scottish fortalices of that era, was constructed of timbered earthwork. For a castle of this type the site is eminently suited. Red Castle was the capital messuage of the ancient thanage of Inverkeilor, which was granted by King William, in 1165, to his chamberlain, Walter de Berkeley, a member of one of those great Anglo-Norman families under whose auspices the feudalising of Scotland was at that time being carried out.¹ It was Walter de Berkeley who, soon after the founding of Arbroath Abbey, made over to it the church of Inverkeilor, with its attendant chapel.² With Walter's daughter the thanage passed to another great Anglo-Norman house, the Balliols. Ingleram de Balliol, who married the heiress, by an undated charter confirms his predecessor's grant of Inverkeilor church to the Abbey of Arbroath, and among those in his entourage who witnessed the deed were Master Roger, the mason of Forfar, and his son William.³ It is more than likely, as Jervise suggested,⁴ that these masons were then employed at Red Castle, and the curtain still existing may well be their handiwork. It is noteworthy that a close masonry parallel to this curtain is found at Dunnideer Castle, Aberdeenshire, which is first mentioned in 1260, and at that time, like Red Castle, belonged to the Balliols.⁵ This coincidence is doubtless not without significance. The name Red Castle obviously derives from the colour of its stonework, and as the castle is so called (*rubeum castrum*) in a deed of 1286,⁶ it is a fair inference that the curtain wall was in existence by that time.

It is stated that in 1306 an Englishman named Fishburn, whose father had married a daughter of the house of Balliol, was lord of Red Castle.⁷ Later on it was held jointly by Sir Henry de Percy and Sir Ingleram de Umphraville, Earl of Angus, and on Percy's forfeiture his share in the barony was granted by King Robert Bruce to Sir Donald Campbell.⁸ But there is also a grant to William Douglas, senior, of the lands of Reid-castell, in the shire of Forfar, which had been forfeited by Eve Mowbray and John Mowbray her son.⁹ This may refer to the other moiety. Sir Donald Campbell's descendant, Sir Andrew Campbell, resigned his interest in the barony in 1367, and it was thereafter granted by David II to Sir Robert Stewart of Schanbothy and Invermeath.¹⁰ A glimpse of local place-names, and of a Gaelic tenant of the soil, is afforded by a charter of Robert II, dated 18th October 1372, confirming an assedation by Ingeram M'Gillelan (M'Lean) to Sir Robert Stewart of the whole davoeh of

¹ G. Chalmers, *Caledonia*, vol. ii. p. 529.

² *Ibid.*, No. 58.

³ See my paper in *Proc. Soc. Ant. Scot.*, vol. lxxix. pp. 460-71.

⁴ *Registrum Vetus de Aberbrothoc*, No. 293.

⁵ *Registrum Magni Sigilli*, 1306-1424, App. I, No. 76.

⁶ *Ibid.*, App. II, Nos. 774, 1127.

⁷ *Registrum Vetus de Aberbrothoc*, Nos. 54, 55.

⁸ A. Jervise, *Memorials of Angus and the Mearns*, vol. i. p. 56.

⁹ Jervise, *op. cit.*, vol. i. p. 15.

¹⁰ *Ibid.*, Nos. 273-4, in the body of the Register.

the lands of Castleton, Hogeston, and Westirbalblayn, with the half of the mill of Balblayne and the quarter part of Morhuse "in the barony of Red Castle above Lunan."¹

The Stewarts of Invermeath remained in possession until the end of the sixteenth century, and one of them will have built the tower-house within the ancient curtain.

On 27th February 1579, and again on 3rd February 1581, the "castell, tour-hous, and fortalice of the Reidcastell" was assailed "*bombardis et bombardulis*," captured, plundered, and burned by a neighbouring laird, Andrew Gray of Dunnimald, under scandalous circumstances, which are set forth in full detail in a contemporary Act of Parliament, by which the aggressor was outlawed and his lands and goods were forfeited.² The official account describes how on the first occasion the castle was entered under cover of night by scaling ladders and the hall and chambers within the courtyard were won, the defenders taking refuge in the great tower. The tower was thereupon attacked with bombards and its gates blown in. Marjory Stewart, the daughter of the house, was almost suffocated by the smoke, and being then great with child, sustained a miscarriage. The siege of the tower lasted until 2nd March, on which day the defenders were relieved by a force under the provost of Dundee. At the second assault the garrison consisted of two men and one woman, so Gray had no difficulty in winning the whole castle, tower and all, and thereafter burnt the "laigh bigging" both within and without the courtyard.

Before the middle of the next century, the barony of Redcastle had passed to the Ruthvens of Gardyne.³ Subsequently it was purchased by the Earl of Northesk. It now belongs to the estate of Panmure. The castle itself is said to have been last inhabited by the Episcopalian minister of Inverkeilor, after his deprivation in 1689.⁴ It is also stated to have been dismantled in 1748.⁵ Grose's picture, drawn in 1790,⁶ shows it much as it is to-day. It is recorded that after 1748 the tenants were allowed to cart away the stones, and it therefore seems that the tower has been partly demolished for the sake of its fine materials.

The site of the castle (see plan, fig. 1) is the outer or eastern portion of an elevated kame projecting boldly upon the beach about midway in the noble semicircular sweep of Lunan Bay. On the north side it overhangs, in a very steep bank, the Water of Lunan, which swings round to the

¹ *Registrum Magni Sigilli*, No. 515.

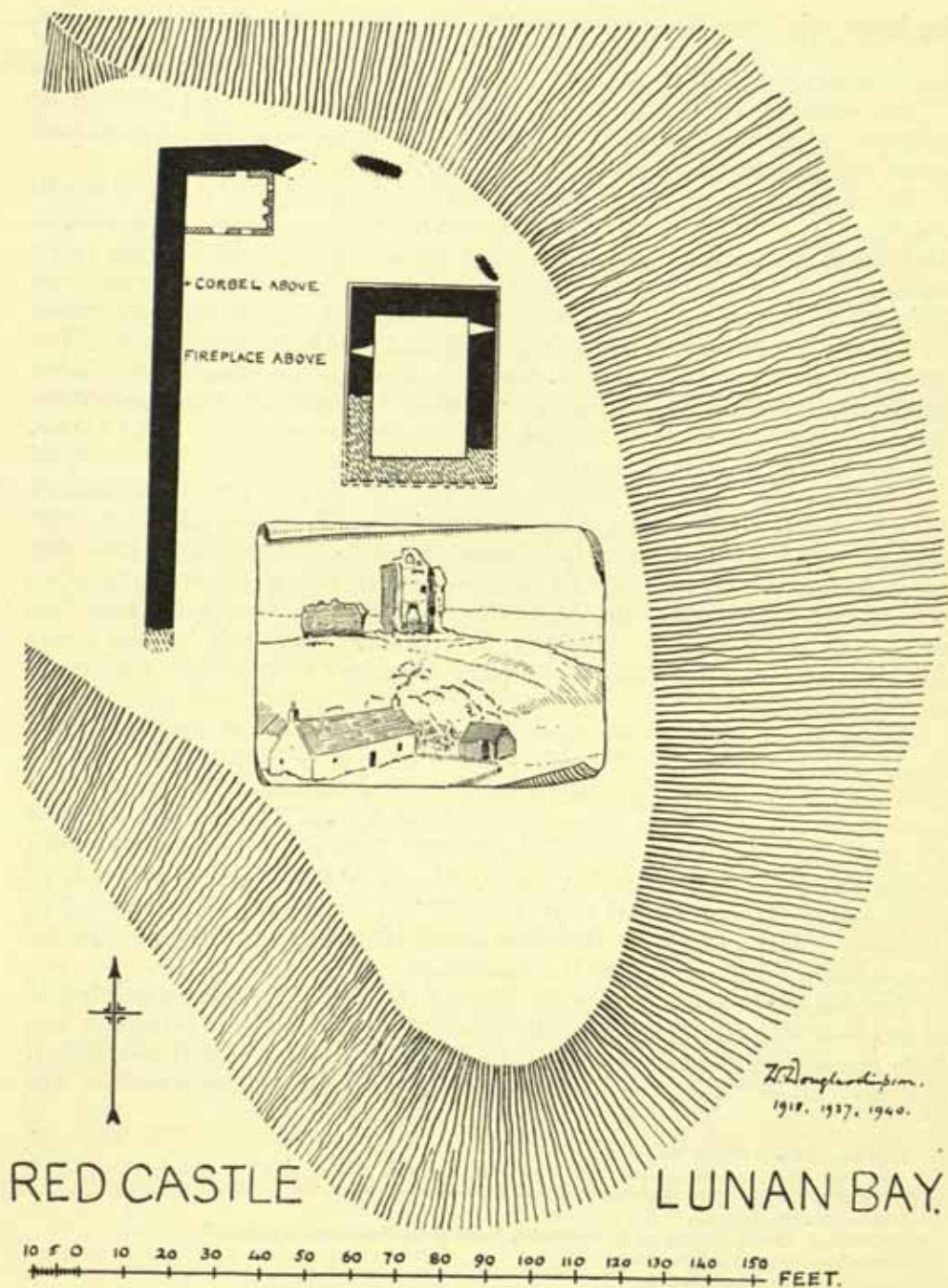
² *Acta Parl. Scot.*, vol. iii. pp. 206-210; *Reg. Privy Council*, vol. iii. pp. 125-6, 154-6, 171-2, 188-9, 211, 217, 230, 276, 278; *Misc. Spalding Club*, vol. iv. pp. 60, 63, 68-9.

³ Jervise, *op. cit.*, vol. i. p. 17.

⁴ Sir William Fraser, *History of the Carnegies, Earls of Southesk*, vol. i. p. lxxxii.

⁵ *Forfarshire Illustrated*, pp. 112-3.

⁶ *Antiquities of Scotland*, vol. ii. p. 263.



eastward amid sandy flats, and enters the sea at a point about opposite the castle. This steep bank is continued round the eastern or seaward point, but towards the south the kame descends, less abruptly, into a basin now filled with arable land, but in earlier days probably a marsh. This basin extends westward until it merges into the haughs through which the Lunan Water meanders; and on that side also the kame presents a front steep and bold, though now obscured by fir-trees. The castle area itself is isolated by a transverse hollow which, starting from the basin on the south side, sweeps round by the west to the northern brink, losing rapidly in depth, but still distinct enough to isolate a more or less level area, whose highest point, at the seaward extremity, forms the actual site of the castle. It is a fairly flat, grassy platform of perhaps an acre in extent. The rest of the kame summit, west of the hollow, is also pretty flat, and covered with coarse grass and broom. Here there are no traces of outworks, and all the features described, including the transverse hollow, appear to be purely natural; but there is an indication of the start of a ditch at the north-west corner of the castle (see plan). The kame forms part of the 50-foot raised beach, which makes a conspicuous feature all round the rim of Lunan Bay.

The remains of the castle comprise the northern end of a massive oblong tower-house, standing at the seaward end of the platform; a long fragment of the western wall of *enceinte*, with part of its return on the north; and various foundations that indicate the considerable extent of the buildings.

Evidently the west curtain is considerably older than the tower. It extends in a straight line from near the north end of the platform for a length of 105 feet, at which point it is broken off, though its foundations extend yet farther. From the broken end one or two massive fragments have fallen. The curtain is 6 feet thick and upwards of 20 feet in height to the top of its ruined parapet wall. In construction it differs markedly from the tower. The outer facing (see Pl. XXIX, 1) consists of roughly dressed irregular stones of varying sizes, mostly of the local red sandstone, with a tendency, due to the material, to build in oblong blocks, low in the course—quite different from the careful and neat ashlar masonry of the tower. The hearting consists of large water-worn or ice-rounded boulders of the local sandstone and intrusive rocks, arranged in parallel layers separated by thick beds of mortar, in a very definite manner which shows up strikingly where the facing has been peeled away. Seashells are freely used in the mortar, in which also much charcoal is found. This bold and banded construction of the hearting finds no parallel in the tower, where the substance of the walls consists of small angular fragments thrown in anyhow.

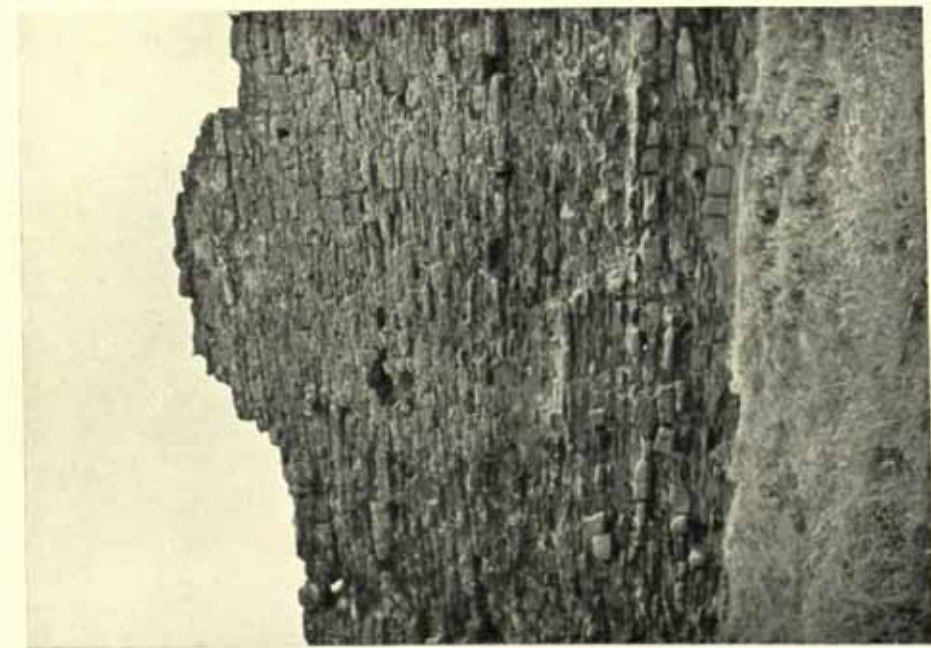
At the north end of the curtain is a quoin carefully wrought of large

squared freestones. This has a more recent appearance. From here the wall returns to the east, at rather more than a right angle, for a distance of 24 feet, where there is an obtuse angle, beyond which the wall, here aligned to meet the north face of the tower, is broken away. There are no dressed quoin stones at this second angle, and indeed the whole north curtain is evidently newer than the curtain on the west. Its masonry is altogether poorer, with a more frequent use of *petit appareil*, and the hearting does not show the banded construction. Moreover, this wall is slightly thinner than the west curtain. There can be small doubt that in the original scheme the west curtain was carried right to the northern verge, here to meet, at a sharp angle, the original north curtain, some fragments of which still crop out opposite the tower.

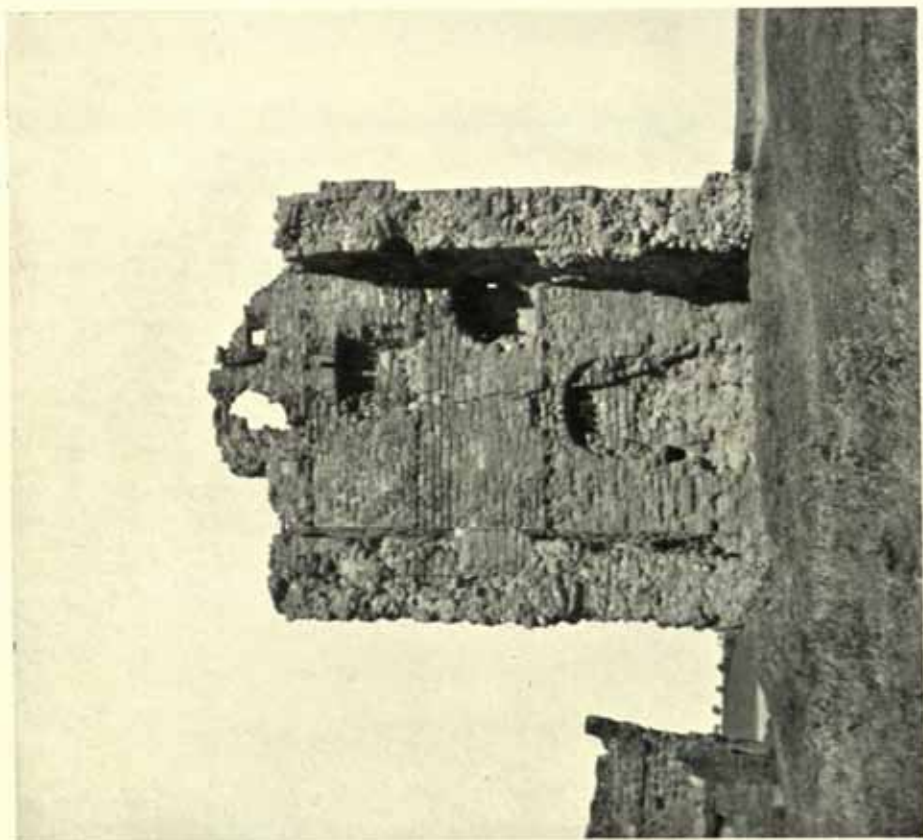
Despite its rough workmanship the west curtain is excellently built. The allure and parapet still survive in a semi-ruinous condition. Three more or less perfect gargoyles and the stubs of four others remain. They are semi-octagonal in section, carefully mitred into their bedding stones. The parapet is built of smaller material than the rest of the curtain, and looks like a reconstruction. In the north curtain two gargoyle stubs are visible. Up to a height of about 14 feet all along the inside of the west curtain its facing has been almost entirely removed; above this the facework is much more regular and is built of better dressed stones than elsewhere in the curtain. At this level, about midway in its length, are the remains of a fireplace, from which all the dressed stones have been looted. A little north of this fireplace is a single large plain corbel. Evidently a hall stood along this curtain, with a cellar or storehouse beneath it. Doubtless the corbel marks the position of a wooden parclose dividing off the *camera*. Against the rebuilt north curtain there has been a lean-to, indicated by a deep chase in the north and the adjacent part of the west walls, and by a broad corbel in the former. At present, the site of this building is occupied by the roofless shell of a small one-storeyed cottage, erected in the early part of the last century for the use of the coastguard.¹ The old north returning wall does not form part of this cottage, whose north wall is built up against its peeled inner face so as to secure a rectangular interior, as the ancient walls here are rather more than at right angles. A large part of the outside of the west curtain has been similarly robbed; and it is worthy of notice that traces of joist-holes and a roof-chase seem to indicate the presence, at some period, of a lean-to on the *exterior* face of this curtain.

In the absence of distinctive architectural features, it is difficult to

¹ In olden times Lunan Bay was a notorious haunt of smugglers—*New Statistical Account*, vol. xi., Forfarshire, p. 327. The coastguard station is shown as a going concern in the view of Red Castle in *Forfarshire Illustrated*, published in 1848.



[Photo G. F. Goddard,
1. Red Castle: Exterior of Curtain.



[Photo G. F. Goddard,
2. Red Castle: Interior of Tower House.



[Photo G. F. Goddard.]

Red Castle: North end of Tower House and north-east corner of Curtain.

W. DOUGLAS SIMPSON.

estimate the date of this curtain. "Its ragged fragments," in the words of Grose, "carry the appearance of antiquity." The rough coursed and closely packed aspect of the external masonry, and the banded hearting, remind one of other Scottish walls of *enceinte* dating from before the Wars of Independence, such as those of Balvenie or Lochindorb, or the masonry of the tower of Dunnideer, already mentioned. Upon the whole, there seems to be every likelihood that this curtain wall at Red Castle may be as old as the thirteenth century.

The tower-house (Pl. XXIX, 2, Pl. XXX) at present stands free on the eastern verge of the castle area. It measures 44 feet by 32 feet 9 inches, lying north and south, and the walls are 5 feet 6 inches thick. Of these, the north wall, about half the west wall, and rather less than two-thirds of the east wall are extant to the parapet; the rest is mere foundations. The masonry is very substantial. A hearting of small stones, well grouted, is cased, inside and out, with fine regular sandstone ashlar in 8- or 9-inch courses, the stones varying in length from 1 foot to 1 foot 7 inches, with frequent "closers." Unlike the majority of Scottish examples, the tower, which contained four storeys and a garret, was unvaulted, the joist holes of all the floors being evident in the end wall. The basement shows two loops, one in each side wall. They are 2 feet 6 inches high and 5 inches wide, with the usual inward splay and a 3-inch external chamfer. This room would form a storehouse. On the first floor was the hall, whose large fireplace may still be recognised in the north wall, though jambs and lintel have gone, and only the well-formed, elliptic relieving arch remains. In the east wall is a tall window, with an arched ingoing, in which there appear to have been the usual stone seats, now destroyed. On this side of the tower, the wall at the first floor level has been thickened interiorly. The second floor has a similar window on the east side, and beside it in the north wall is a carefully vaulted garderobe, with a tiny loop—the only window in the north wall of the tower. Below it emerges the garderobe vent. At the broken end of the west wall, on this level, one jamb of a handsome fireplace survives. It is broad, built of fine ashlar, rounded on either side but brought out to the square above, and resting on a kind of square, swelling base. A portion of the projecting hood remains, and in the angle is a sconce for a light. This storey will have formed the great chamber of the lord. The top flat had contained his solar or private room, and is marked by the remains of a fireplace in the north wall, from which, like the fireplace below it, all the dressed stones have disappeared. On the west side there is a window—the only large opening in this wall—with an elliptic rear-arch, neatly wrought in ashlar: the chamfer of the voussoirs dies out on the jambs. At this level, just where the east wall breaks away, is the fragment of a garderobe jutting.

The parapet of the tower is gone, but the bold, handsome corbels,

each composed of two filleted courses, remain, together with the bases of two angle "rounds." These have three continuous corbels, beautifully mitred, above which are separate corbels in continuation of those on the wall-faces, and carrying the cavetto moulded base of the parapet. The three corbels on the north front next the north-east turret rest upon older, broader corbels, indicating a reconstruction. Within the roundway was a garret, of which the north gable survives in a fragmentary state, with a ragged rent marking the chimney flue, and one small window. It is built of poor masonry, and looks late. A plinth of two chamfered courses runs round the tower, and at its north-east corner is stepped down in obedience to the ground.

This tower-house has been in every way a finished and comely piece of design, and its partial demolition is much to be regretted. Its architectural characteristics point to a date in the fifteenth century. No doubt the fine workmanship has led to the extensive robbing of the dressed detail. In particular, the quoin stones, so far as accessible, have fallen a prey to local greed. Damage has been worst at the north-east corner, which overhangs the sea, and is now in a precarious state. On the north wall, a chase about 12 feet above ground, and sundry joist-holes, indicate that there has been a "to-fall" here.

VIII.

NOTES ON AN OLD COAL-WORKING AND A WOODEN SHOVEL FROM ORMISTON, EAST LOTHIAN. BY KENNETH M. WHITE, M.INST.M.E.

Read March 29, 1941.

During the working of the Four Feet Seam from Limeylands Colliery, Ormiston, by the Ormiston Coal Company Ltd., a number of "Rooms" (*i.e.* roadways of the Stoop-and-Room method of working) communicated with old uncharted coal-workings of the same seam during March 1938. It is impossible to state the precise date of these old workings, since no plans or other dated records regarding them exist. It is possible only to approximate to the time by historical references and from the evidence of the workings themselves; both sources suggest the coal-workings to be about two hundred years old. The *Letters* of John Cockburn (p. 97) prove that miners lived and worked in Ormiston in 1727, and in the same *Letters* (p. 38) it is mentioned that about 1730 the manager of the coal

mine at Ormiston "was to inform Cockburn how many fathoms of rock were to be cut through; was to give an estimate of the time necessary to do the work, and was afterwards to report progress."

The seams then worked were naturally those most easily reached, and since the Tranent Splint, Four Feet, and No. 1 Diamond Seams outcrop or come very near to the surface in the vicinity of Ormiston, these seams have been worked during the eighteenth and nineteenth centuries, and their "wastes" have been encountered frequently by more recent workings.

The position of the old Four Feet workings, where the wooden coal shovel was found, may be fixed by reference to the 6-inch Geological Survey Sheet, Edinburghshire IVa, S.W., or Haddingtonshire IX, S.W. The workings lie about midway between the farm buildings of North Mains and the Monktonhall, Ormiston, and Macmerry Branch of the London and North-Eastern Railway. In the valley now occupied by the railway and along which the Bellyford Burn flows, the Four Feet Seam is only some 15 feet below the surface. No superficial evidence now exists to mark the entrance to this old working, but entry was by a short stair-pit at a point near the present railway. The bottom of this old pit was encountered recently in the course of working the seam.

The underground evidence shows that the workings have been entirely filled or flooded with water, until recent mineral operations caused this water to "seep" to a lower level. It is probable therefore that the Bellyford Burn flooded into the workings (this burn even at the present time often overflows its banks during excessive rain) causing the involuntary abandonment of the mine. Involuntary it must have been, as the old "faces" are standing on good coal, which to-day is being worked. Although the old workings are haphazard and irregular in their layout, it is evident that some care has been given to the support of the roof and sides. The galleries are so near the surface that no great roof pressure could be experienced. But precautions had to be taken against any fall of roof, as this would cause a hole or "sit" on the surface, especially as the "cover" is only a few feet of soft rocks and about 10 to 12 feet of surface clay and gravel. For this reason, the system was designed to uphold the surface, without the use of timber for its support. To keep the roof secure, the roadways have been driven about $3\frac{1}{2}$ feet wide, and cut in the shape of an elliptical arch about 3 feet 3 inches high. It is interesting to note that in present-day coal-mining, where considerable roof or side pressures have to be overcome, the circular and elliptical arched roadway is being extensively used, as being the strongest. The section of the seam is shown in fig. 1. The "holeing" has been done in the centre of the seam, the top coal dropped, and then the bottom coal lifted, exactly as is being done in this seam by the miners at the present time. The stoops left in

to support the roof are irregular, and many approximate only 3 feet square.

The height of the roadways has prevented the employment of "bearers," i.e. women who carried out the coal on their backs in baskets

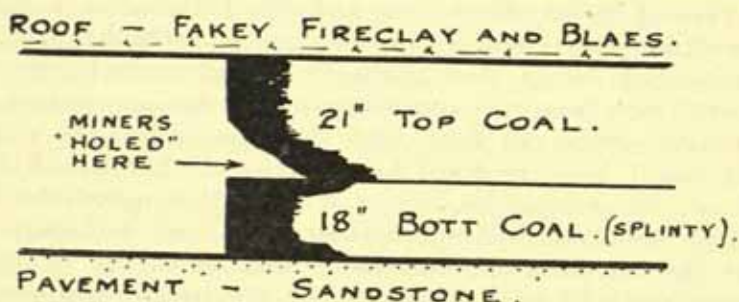


Fig. 1. Section of Four Feet Seam.

or creels. No rails have been used in the roadways, and the coal has been pulled, probably by women, along the pavement in "slypes" or sleds, by a light harness fastened to the shoulders of the "drawers" (fig. 2).

In these abandoned workings, the wooden coal shovel already referred to had been left at the face of what was the Main Road. On breaking

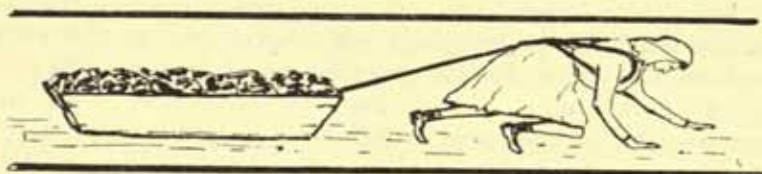


Fig. 2. Drawer.

through on this face the shovel was discovered. It was coated with a thick wet oxidized scum or yellow ochre, which, together with long immersion in water, accounts for the excellent preservation of the wood.

The shovel (fig. 3) has been carved from one solid piece of beech wood, and is 35 inches long overall. The handle is carved like the handle of an ordinary garden spade, but the curved shoulders show that the implement has been designed for lifting only, and not for digging. The shaft is rounded and tapers from $1\frac{3}{8}$ inch at handle to $1\frac{7}{8}$ inch at shovel end. The shovelling part is 9 inches long and has been about 8 inches wide, but about $1\frac{1}{2}$ inch on one side has split off and is missing. The shovel was at one time shod with iron, as is shown by nail holes, and it is just possible that when the part split off, the iron shod or shoe was removed for fitting to another shovel.

It is also possible that other "graith" or coal implements have been left in the old workings, but when the roads were opened to the action of the fresh air, numerous falls of roof occurred within a few days, preventing further exploration.

A comparison of the shovel with other old wooden shovels is interesting. In the Scottish National Museum of Antiquities in Edinburgh there are a number of wooden shovels, yet only *one* that is said to be from a coal mine (fig. 4). On comparing it with a pointed peat spade having square shoulders for pressing down into the peat with the foot, one is inclined to doubt if this shovel was a type which could be used in practical mining—even the primitive mining of the beginning of the eighteenth century. To shovel coal with this so-called coal shovel would seem to be a misuse of its function as signified by its shape. The old wooden shovel discovered at Ormiston has rounded shoulders and true shovel shape, which definitely supports its claim to be a coal shovel.

In order to define the age of the old wooden shovel, it is interesting to note that at the beginning of the nineteenth century no "small coal" was allowed to be filled by the miners. The market then demanded coal no smaller than 2 inches to 3 inches, and to secure this with expedition and certainty the miners were required to use "brander" or "brandered" shovels, these being iron shovels with wooden handles, the shovel part being composed of prongs or bars set 2 inches to 3 inches apart (fig. 5). The smaller coal dropped through these bars as the coal was being filled. But no small coal, such as would have accumulated if these had been used, was found in the old workings. Similar "brander" shovels may be seen at coal depots at the present time, and are used in filling coal bags from wagons so as to leave out the "smalls."

Confirmation for the foregoing inferences is provided by the following extract from a contract, dated 11th March 1811, between Messrs Landers & J. Durie, the lessees of the coal on the lands of Elphinstone in Tranent Parish, which bounds Ormiston Parish, and a number of colliers. This contract stipulates that "the coals are to be filled at the pit bottom with brandered shovels 2 inches wide" (McNeil's *Tranent*, p. 174) and shows that this type of shovel was in common use near Ormiston at that time.

This fact metaphorically throws our old wooden shovel back into the

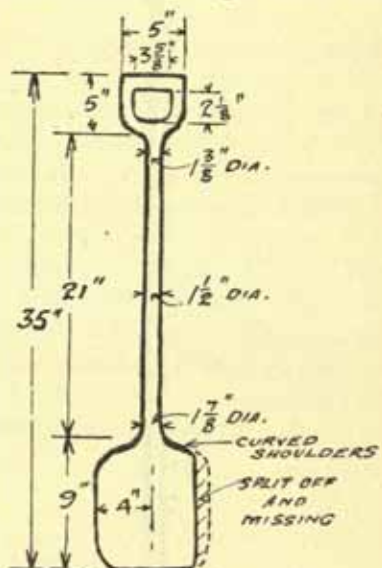
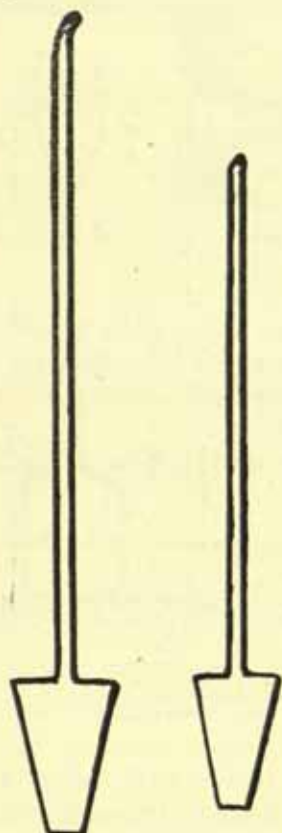


Fig. 3. Sketch of old wooden shovel.

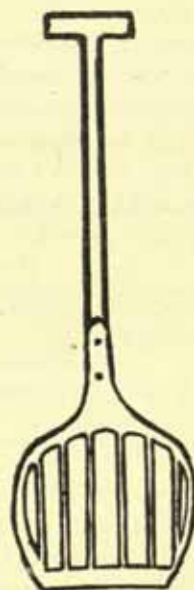
eighteenth century. Now it is known that for a period between about 1745 and the beginning of the nineteenth century, mining in Ormiston ceased, and that the old class of slave miners had removed from the district. It seems reasonable to suppose they removed to Tranent district where mining was the chief occupation of the inhabitants, while in



Peat
spade.

Coal
shovel(?).

Fig. 4.



Branded shovel.

Fig. 5.

Ormiston with its numerous market gardens the inhabitants mostly followed agricultural pursuits. In any case, this temporary cessation of mining in Ormiston is not difficult to understand, as the strata there are undulating and considerably faulted. Thus, coal worked at the outcrops would soon meet with faults which would require proper tools and machinery to cross, and when crossed would need, among other things, pumping-plant to deal with water. It was not then considered worth while to expend capital on such work, and not until the nineteenth century did coal-mining in the district again become a trade. It would seem, then,

that the wooden shovel belongs to the period to which Cockburn's *Letters* relate, and one is forced to conclude that it belongs to about 1730, which makes it therefore over two hundred years old.

The Directors of the Ormiston Coal Co. Ltd., realising the historical value of their discovery, decided to present the shovel to the Scottish National Museum of Antiquities in Edinburgh, in the knowledge that it would be preserved in the best possible way.

An even higher antiquity might be deduced from a discovery made since the foregoing notes were written. A shaft sunk from the surface to the Four Feet Seam was encountered about 50 yards from the shaft used in the old workings, and it is somewhat puzzling to present-day mining folks to find that no coal has been worked from this shaft. Now Prof. Granville Poole, in his researches into the development of underground haulage, states that "during the *seventeenth century* 60 yards was considered the maximum distance to extend the workings from any shaft, due to the expense and laborious method of drawing the coal underground. It was, therefore, the custom to have another *shaft sunk in advance*." Thus these old workings might very well belong to the seventeenth century, but as no records have yet been found to prove that there were coal workings in Ormiston at that time, the date must be assumed the eighteenth.

IX.

THE CUP-MARKED STONES OF NORTH UIST AND BENBECULA. By J. D. LYFORD-PIKE, M.A.

(*Chalmers-Jervise Prize Essay for 1931.*)

INTRODUCTION.

Known to the natives simply as "The Long Island," and regarded by geologists as "the oldest known fragment of Europe,"¹ the Outer Isles stretch in a continuous chain from Barra Head to the Butt of Lewis. Occupying a central position in these comparatively remote regions is North Uist, a bleak expanse of gentle undulating country, which is bounded on the west and north-west by the Atlantic Ocean, on the north and north-east by the Sound of Harris, on the east by the Little Minch, here about 15 miles wide, and upon the south by the treacherous North Ford, separating it from Benbecula. As far as rock-markings are concerned, the small islands which lie scattered round the "mainland" of North Uist are of special importance, for upon one of them is the largest cup-mark and upon another the largest cup-marked group noted throughout the whole of this paper.

¹ Geikie, *The Scenery of Scotland*, p. 125.

GENERAL SURVEY.

Throughout this list a strict geographical sequence is adopted, commencing at the mid-north of the island (fig. 1), and thence proceeding anti-sunwise by the west and south to the east.

1. From the centre of the north coast of North Uist there stretches into the Sound of Harris a narrow sandy peninsula covered with bent over two and a half miles long, ending in a short promontory called Ard a' Bhorain (the "Row Ardineen" of Blaeu, 1654), terminating within a mile of the island of Boreray. This island is a mile and a half long, and towards its south-east corner is a small knoll about 6 feet high and 26 feet in diameter; outcropping slightly through its sides are four small cup-marked faces of rock. Three of the outcrops slope slightly towards the top of the knoll, their surfaces being comparatively smooth and slightly convex, and on each of them there is only one cup-mark. On the fourth rock there are three very clearly defined examples and two others less noticeable (Pl. XXXI, 1). When standing at the centre of the knoll this group is seen in a west-south-west direction, and the isolated single cups lie to the south-west, the south-south-west, and the north-north-east; all the markings being within 8 to 13 feet of the top of the hillock. The cup-markings lying to the west-south-west are situated on a nearly level surface measuring 4 feet long by 3 feet broad, which, although fairly smooth, is traversed by long parallel cracks, two of which nearly cross the whole outcrop (fig. 2). The largest cup in this group, and indeed in any on North Uist, is placed near the middle of the stone and measures $5\frac{1}{2}$ inches wide by $3\frac{1}{4}$ inches deep. The other two striking examples both measure 4 inches by $1\frac{1}{8}$ inch; the dimensions of the less obvious examples being $3\frac{1}{4}$ inches by $\frac{5}{8}$ of an inch, and $2\frac{1}{2}$ inches by $\frac{7}{8}$ of an inch. The single cup-markings on the outcrops lying to the south-west, the south-south-west, and the north-north-east measure $2\frac{1}{2}$ inches by $\frac{5}{8}$ of an inch, $2\frac{1}{2}$ inches by $\frac{3}{8}$ of an inch, and $3\frac{1}{2}$ inches by $\frac{5}{8}$ of an inch respectively. It is possible that these latter are all natural, but it is much more probable that they are artificial, especially as the undoubted examples of cup-markings lie in such close proximity to them.

2. At Oban Skibinish, three-quarters of a mile from Grenetote, on the east side and towards the mouth of an inlet half a mile long, is a small islet lying 100 yards south-east of a rocky island called Eilean Holsta. Surrounded by water at half-tide, though never cut off from the shore by a channel more than 25 feet wide, the nameless islet bears no obvious traces of any ancient structural remains. However, upon its grassy summit, at the east end of a comparatively modern ruin, is a thick slab of stone embedded on end, bearing on its irregular upper surface three cup-markings, about $3\frac{1}{2}$ inches in width and $1\frac{1}{2}$ inch deep, which are most probably artificial.

CUP-MARKED STONES OF NORTH UIST AND BENBECULA. 129

3. On the shore below high-water mark, 200 yards west of the burial-ground at Ard a' Bhorain and barely $2\frac{1}{2}$ miles north-north-east of Grenetote,

SITES OF CUP-MARKED GROUPS IN
NORTH UIST AND BENBECULA

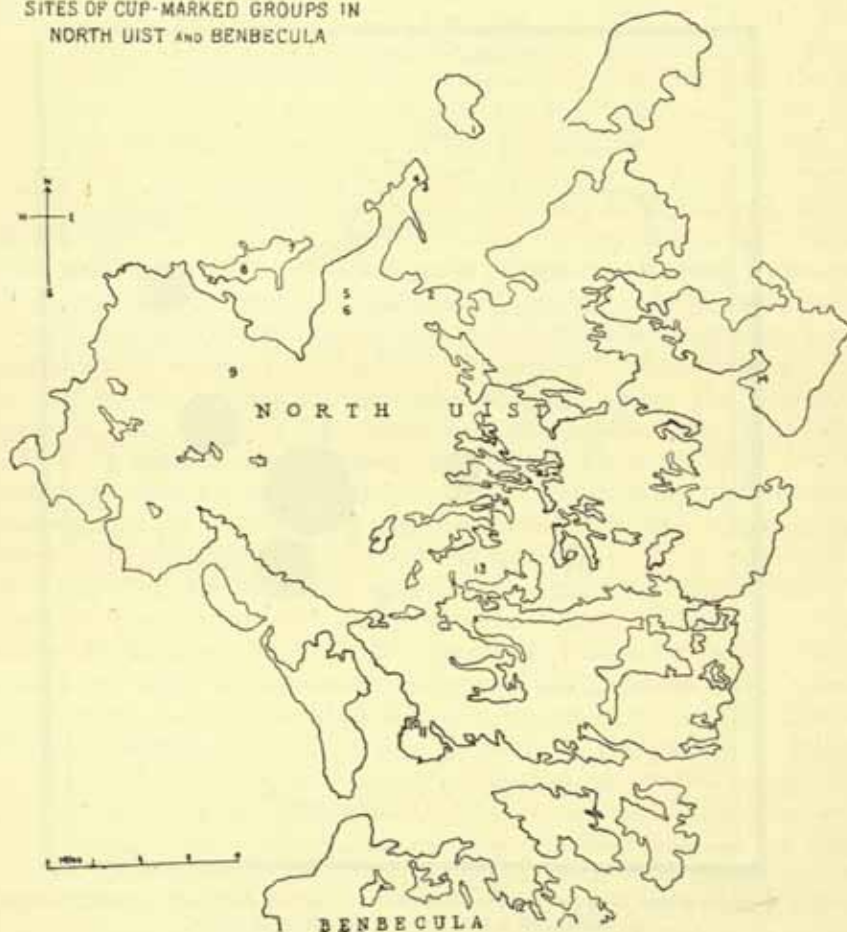


Fig. 1. Map. Sites of cup-marked groups are numbered; No. 12 appears in Benbecula.

is the site of a cup-marked rock known to have been plainly visible from 1880 till 1914, but now entirely covered with pebbles; the level of the
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beach here having risen over a foot. The spring of fresh water, appropriately called "The Well of the Cups" (which bubbled up near the base of a massive rock washed by the waves at high tide and having on its flat vertical surface an incised Latin cross potent still partially visible) has also been completely buried.

The three following extracts give most detailed and only very slightly

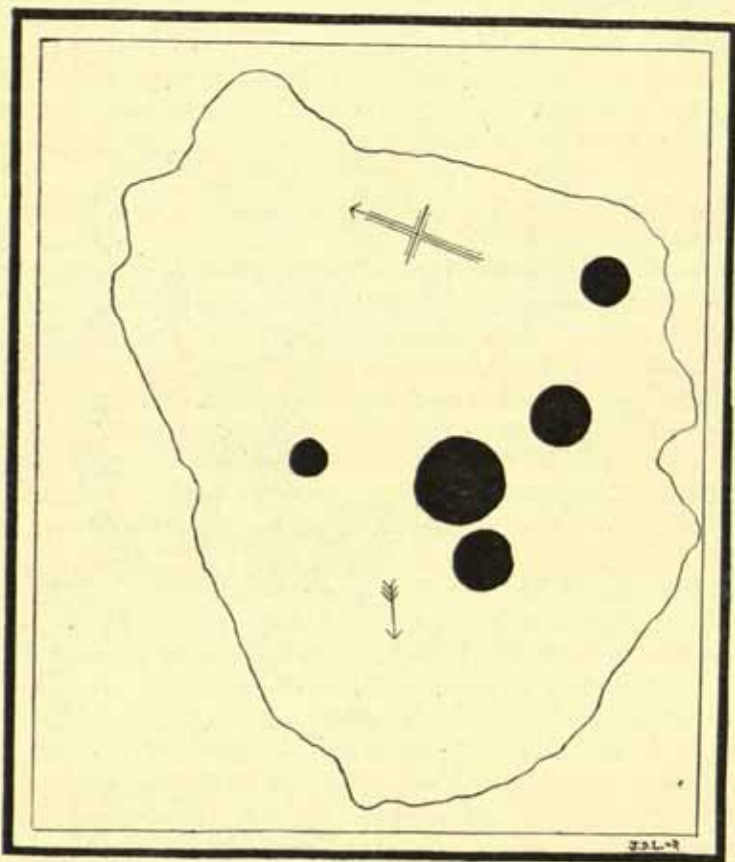


Fig. 2. Main group of cup-marks on Boreray. *N.B.*—On this and subsequent plans a feathered arrow denotes direction of slope.

overlapping accounts of the cup-marked rock, and are especially valuable as they contain all the matter that can, short of excavation, be obtained upon the subject (Pl. XXXII). The late Dr Erskine Beveridge states that there "are 24 cup-marks arranged along the twin narrow and parallel ridges of a boulder embedded within the pebbly beach, above which it slightly protrudes. Upon the southmost edge, these cups are arranged nearly in line east and west; while upon the other, six are in line and

four in a group near the east end. All are shallow and measure 2 to 3 inches in diameter, half of the total number being very well defined and the remainder more or less indistinct."¹ *The Inventory of Monuments and Constructions in the Outer Hebrides, Skye and the Small Isles*² gives this description of the rock as noted on the 17th of August 1914: "Some 28 feet south-east of the cross . . . are two impinging parallel ridges of rock outcropping through the shingle, showing a length of 3 feet 2 inches and 4 feet 2 inches and a breadth of about a foot. On the western shorter ridge are at least eight cup-marks, four in an irregular line near the apex of the rock and four placed lozengewise at the northern end, while about a dozen occupy the line of the ridge of the parallel rock. The cups vary from $3\frac{1}{2}$ to $2\frac{1}{2}$ inches in diameter and from $2\frac{1}{2}$ inches to $\frac{1}{2}$ inch in depth." William Jolly, writing in 1881, says that "Not only is the face of the rock on which the cross is incised cupped, but also its top above the well, and most of the stones round the well are more or less carved with well-formed cups, cut in a dark blue or black hornblendic rock. At the other side of a rocky cape, on the north side of the well, they also occur on various stones, and notably on the top of a high angular slab resting like a "crom-lech" on others, the surface of the slab being far above the height of a passer-by and only reached by climbing. Altogether, the whole forms as remarkable a gathering of cupped stones as I have yet seen."³ This last statement is not to be considered lightly, coming as it does after a minute description of over eighty cupped surfaces in the neighbourhood of Inverness. It is surprising that of the many groups of cup-markings distinctly alluded to by W. Jolly, only one—containing some twenty-four cups, now no longer visible—has afterwards been identified. Neither Dr Erskine Beveridge⁴ nor Dr J. Graham Callander were able to discover any of these mysterious cup-marks, and, where their searches have proved unsuccessful, it is superfluous to mention the failure of mine.

4. The cup-marked stone which was formerly in the garden at Balelone is now at Scolpaig House, and is in the possession of Dr Mackenzie who is keenly interested in local antiquities. This stone was found near the cup-marked rock at Ard a' Bhòrain, and may possibly when in its original position have been noted by William Jolly in 1881.⁵ It measures about 18 inches long by 14 inches broad. Five cup-marks are plainly visible on the rounded top of this boulder, the largest being $2\frac{3}{8}$ inches in diameter and $\frac{7}{8}$ of an inch deep, while the smallest is $1\frac{3}{8}$ inch in diameter and $\frac{3}{8}$ of an inch in depth. Four of the cups are placed so as to form a rough-shaped diamond, towards the centre of which lies the fifth.

¹ *North Uist, its Archaeology and Topography*, p. 300.

² P. 80, No. 265.

³ *Proc. Soc. Ant. Scot.*, vol. xvi. pp. 400-1.

⁴ *North Uist, etc.*, p. 300, note. Only "a 'bait-basin' on the top of a rock close to the sea" was noted by the writer of that work.

⁵ *Vide* previous account of cup-marked rock at Ard a' Bhòrain.

5. In the township of Middlequarter (situated between Malaclett and Sollas and about a mile south-west of Grenetote), nearly 700 yards north-west of the school, are the foundations of a crofter's house formerly known as Tigh na Croise. Immediately to the north is a large outcrop of rock with vertical sides and a flattish top, having its longest axis pointing west-north-west and east-south-east and measuring 4 feet in height, 12 feet in length, and 7 feet in breadth (Pl. XXXIV, 1). It is called Clach na Croise ("stone of the cross"), for "at one time it is said an incised cross could be traced on the north-western face of this rock,"¹ which has since disappeared. There is a large crack dividing this much weathered rock into two almost equal parts, the most horizontal surface of the northern half containing six, probably nine, cup-marks (fig. 3). The four most pronounced and the three probable examples are grouped together towards the north-west corner, the cups measuring from 4 inches in diameter and $1\frac{3}{8}$ inch in depth to 2 inches in diameter and $\frac{1}{3}$ of an inch deep. The other two undoubted specimens lie $13\frac{1}{2}$ inches and 29 inches east of the most easterly cup of the large group. On a lower outcrop to the south of the larger rock, and touching it at its base, is another group of cup-marks (fig. 4). This outcrop is also divided by a crack (running north-east and south-west) into two halves; there being on the western segment one doubtful cup, and on the eastern two certain and six probable examples. The doubtful single cup is 3 inches in diameter and $\frac{3}{8}$ of an inch in depth. The two well-defined cups are roughly in line on the top of a ridge and measure $3\frac{1}{4}$ inches by 3 inches in diameter and $\frac{7}{8}$ of an inch deep, and $2\frac{3}{4}$ inches by $2\frac{1}{2}$ inches in diameter and $\frac{3}{8}$ of an inch deep. Of the six probable examples, three lie on each of the two sloping surfaces on either side of the ridge; those to the south-west varying from 2 to $2\frac{1}{4}$ inches in diameter and from $\frac{1}{4}$ to $\frac{5}{8}$ of an inch in depth, and those to the north-east from $2\frac{1}{2}$ inches to $2\frac{7}{8}$ inches in diameter and from $\frac{1}{4}$ of an inch to $\frac{3}{8}$ of an inch in depth. At the east end of the vertical north side of the large rock are two cups, 10 inches apart and measuring $2\frac{3}{4}$ inches and 2 inches in diameter, and $1\frac{1}{8}$ inch and $\frac{7}{8}$ of an inch in depth respectively, which I believe have not previously been recorded. They occur close to three incised markings, two circular and one kidney shaped, which, it is stated in the *Inventory of Monuments and Constructions in the Outer Isles, Skye and the Small Isles*, "may be natural."² Some 11 yards to the south of the lower outcrop above mentioned, on the east face of a small rock, is a large weathered cup $5\frac{1}{4}$ inches in diameter and 2 inches deep—easily distinguishable from the other cups in the vicinity on account of its rough irregular appearance—which is almost certainly natural, for beside it is a small piece of undercut rock which when weathered away will im-

¹ *Inventory of the Outer Hebrides, Skye and the Small Isles*, p. 86, No. 264.

² P. 86, No. 264.

mediately allow two hollows behind it to take on the shape of cups similar to the one already formed.

6. Within a few feet of the east wall of Sollas Post Office, on an outcrop

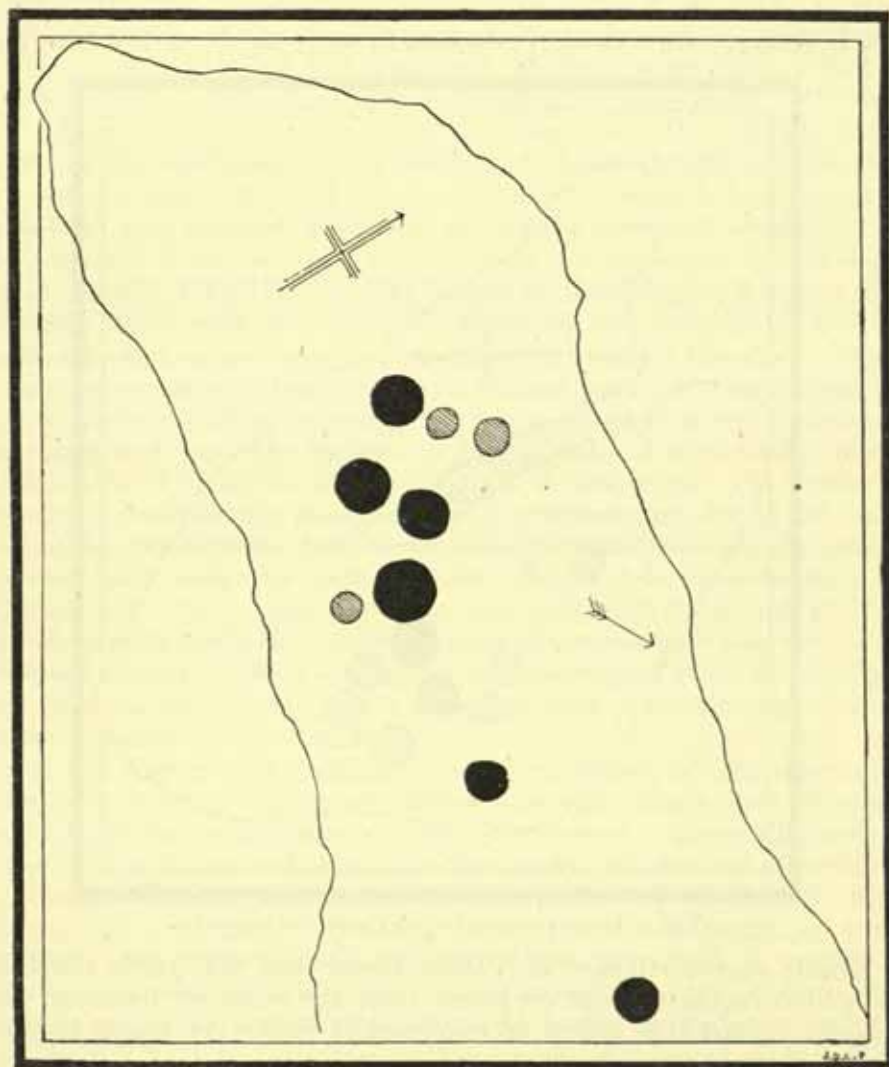


Fig. 3. Clach na Croise, Middlequarter. *N.B.*—On this and subsequent plans cups, which may be natural, are shaded.

of rock about 12 feet in length and breadth, I discovered in August 1931 one almost certain cup-mark (which was slightly weathered on its west side and measured $3\frac{1}{4}$ inches in diameter and $\frac{3}{4}$ of an inch deep) and at least 2 possible examples.

7. At the north-east corner of North Uist, opposite Griminish, lies the sandy island of Vallay, which measures about 2 miles in length by an average of $\frac{1}{2}$ a mile in width and is very regularly accessible up to half-tide by a ford of nearly 2 miles across firm sands from either Malaclett or Claddach-Vallay. At Ceann Uadhach, not far from Bachda Mora,

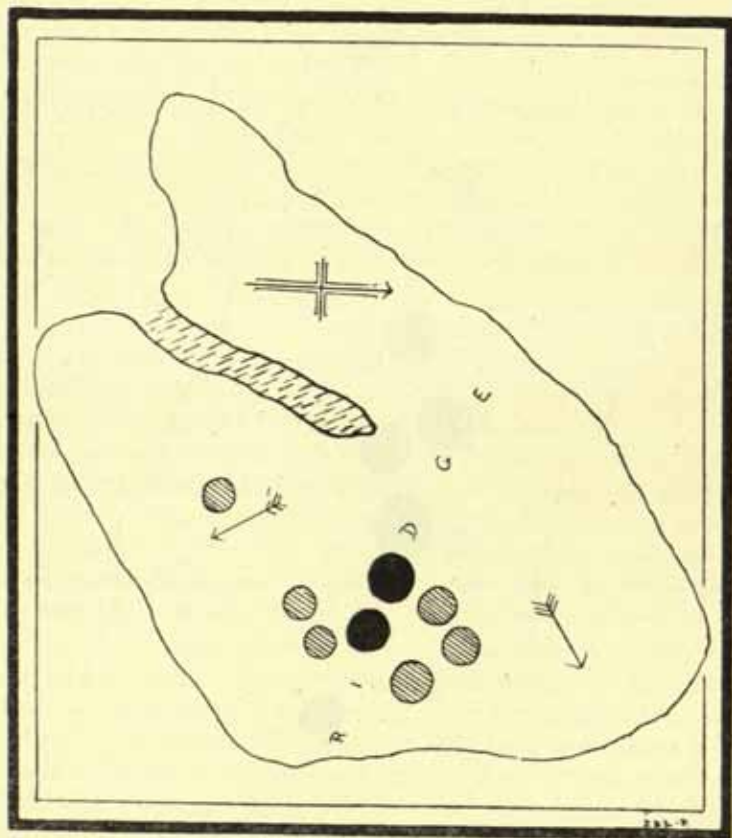


Fig. 4. Lesser outcrop, Tigh na Croise, Middlequarter.

about a mile east-north-east of Vallay House and 600 yards north-east of the modern square burial enclosure near the ruins of Teampull Muir, is the most remarkable group of cup-marked rocks yet found in North Uist.

The site was discovered in April 1925 by Mr George Beveridge of Vallay, who noticed fully forty cups on an outcrop of rock, which must have recently been exposed by the sandhills here having begun to blow, owing to the burrowing of rabbits. When I visited the spot in August 1931, I found about seventy additional undoubted cups and forty probable examples on this rock and on five other outcrops in the vicinity. None

of the cup-markings on this site have, I believe, been recorded, and the great majority not previously discovered, a large proportion of the area of the cup-marked outcrops having been exposed only a short time before my visit.

The majority of the cups lie on an outcrop running roughly south-east and north-west, 18 feet long and nowhere more than 5 feet broad or 2 feet high, which, however, is divided by wide clefts into three, at first, apparently entirely separate sections. On the almost horizontal surface of the one lying to the north-west, whose length and breadth are traversed by more than half a dozen cracks over an inch deep, are fifty-two undoubted and nineteen probable cup-marks scattered irregularly within a few inches of one another, over a large percentage of the level portion of the rock (Pl. XXXIII, 1). The largest of these cups is 4 inches wide and $2\frac{1}{2}$ inches deep, while the probable examples are frequently well defined on one side, but almost completely weathered away on the other. Attached to this outcrop and 9 inches below its highest point, is a projecting column of rock, whose elliptical horizontal surface is 1 foot long and 8 inches broad, and contains a cup—the largest on this island—of oval shape, measuring $3\frac{3}{4}$ inches by 6 inches in diameter and 2 inches deep. The lower half of this cup is considerably more circular in cross-section, for at an inch from the bottom its extreme transverse measurements (namely $2\frac{1}{2}$ inches and 3 inches) only differ by half an inch; hence it is possible that it may originally have been made oval in form and slightly lipped at one end, but it is equally probable that its present shape is merely due to weathering. A minute description has been given of this cupped piece of rock because, from its form and position, it is apparent that particular significance was almost certainly attached to it.

On the uneven but roughly horizontal surface of the middle section of the long outcrop are twenty certain and eight likely cups, of which the largest is $3\frac{3}{4}$ inches in diameter and $1\frac{3}{8}$ inch deep. The south-east section of the large outcrop is divided into two rocks, the smaller of which lies to the south, and, presumably on account of its unlevel surface, does not contain any cup-marks. Running along the whole length of the comparatively smooth horizontal surface of the large rock is a wide crack, and on either side of this are scattered twenty-two well-defined and five probable cups, the largest of which is $4\frac{1}{2}$ inches in diameter and $1\frac{1}{8}$ inch deep (Pl. XXXIII, 2). On the south-west end of this rock, over half a dozen of these cups are placed so close together that a sixpenny piece could here not be laid down without touching one of them. Some 30 feet east-north-east from this rock is another outcrop, $9\frac{1}{2}$ feet long by 9 feet broad and 1 foot high. At its south corner are three cups forming an isosceles triangle, with sides $7\frac{1}{2}$ inches long and a base 6 inches broad. The largest of these cups is $2\frac{1}{2}$ inches in diameter and $\frac{7}{8}$ of an inch deep. At the east corner

of this outcrop on a projecting piece of rock are two well-defined cups and one doubtful example, the largest measuring $3\frac{1}{2}$ inches in diameter and $1\frac{1}{8}$ inch in depth, which are roughly placed in a straight line, and lie on a small ridge between two parallel cracks. Situated on the north-east side of the main portion of the rock is a group of certainly four, probably five cups, the largest of which is $2\frac{3}{4}$ inches in diameter and $\frac{5}{8}$ of an inch deep.

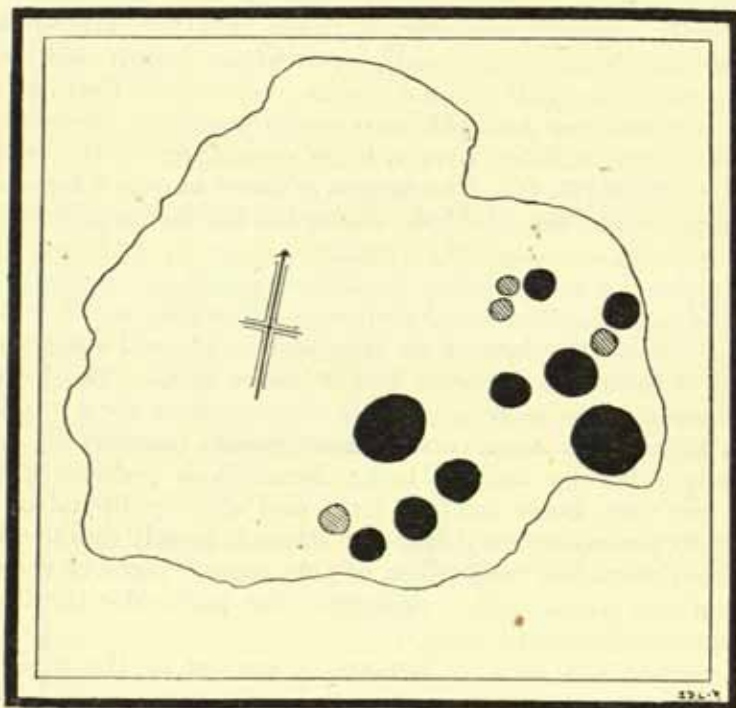


Fig. 5. Rock surface near Bochin and Bachin, Vallay.

Some 30 feet north-north-east of the most northerly point of the long outcrop first mentioned on this site, and 17 feet north-west of the rock just described, is a third outcrop 11 feet long, 6 feet broad, and nowhere more than 9 inches high. At its northern end are certainly eight and probably nine cups, the largest of these being $3\frac{1}{4}$ inches in diameter and $\frac{7}{8}$ of an inch deep (Pl. XXXI, 2). On a small piece of rock at the north-west corner of this outcrop, and separated from it by a wide crack, are five very shallow depressions, possibly much weathered cups.

On the whole of this site, one hundred and eleven undoubted cups, forty probable examples, and five depressions, possibly artificial, were noted.

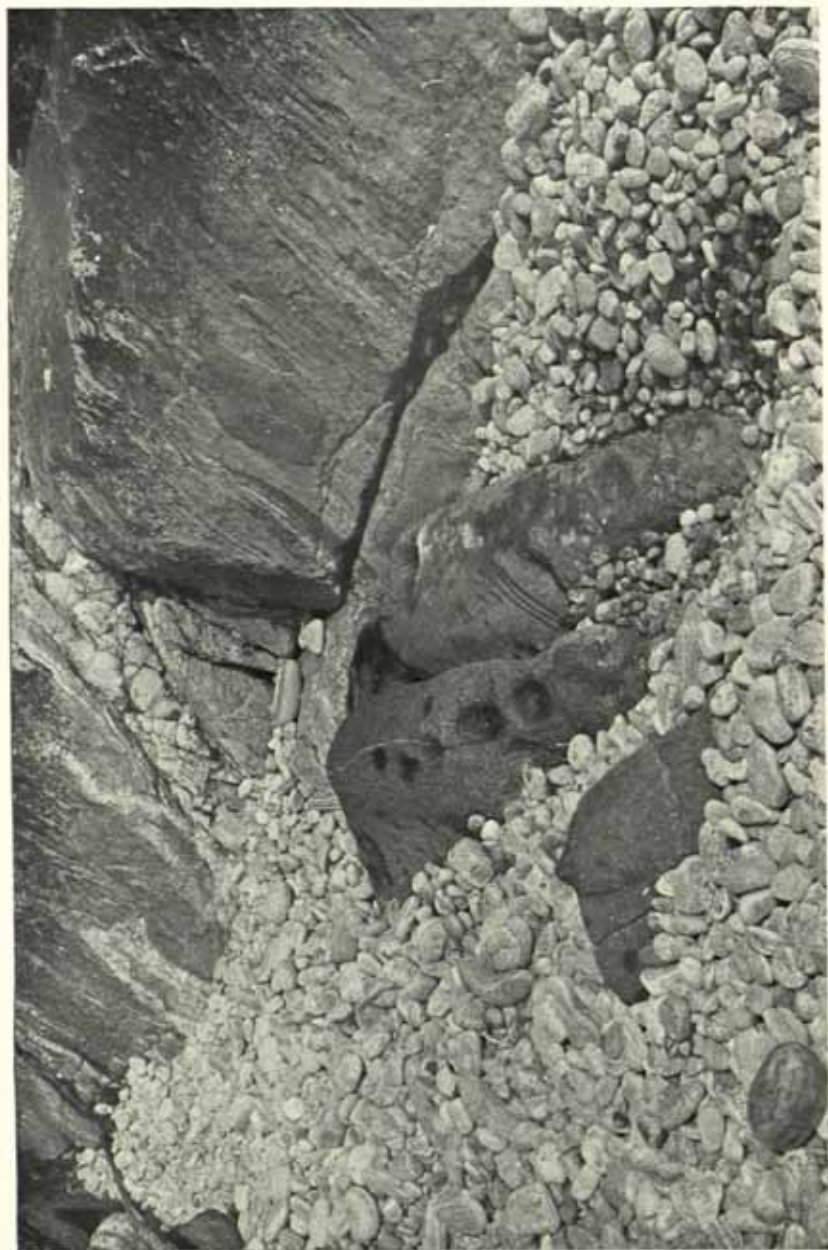
8. About 400 yards west-north-west of Vallay House and not far to



[Photos J. D. L.-P.
2. The most northerly outcrop, Ceann Uadhdarach, Vallay.



1. Main group of Cup-marks on Boreay.



[Photo Erskine Beveridge,

Rock (now covered with pebbles), Ard a' Bhorain.



[Photo J. D. L.-P.

1. The two north-westerly sections of the large outcrop, Ceann Uadhdarach, Vallay.



[Photo J. D. L.-P.

2. The south-easterly section of the large outcrop, from the north-east, Ceann Uadhdarach, Vallay.

J. D. LYFORD-PIKE.



1. Clach na Croise, Middlequarter.

[Photo J. D. L.-P.]



2. Rock surface near Bochin and Bachin, Vallay.

[Photo J. D. L.-P.]

the north-north-west of two large and shapeless boulders, locally referred to by the individual names of Bochin and Bachin, is a small grass-covered knoll rising about 3 feet above the frequently cultivated surrounding land of this, the westmost walled field of the island. On a flat much weathered outcrop of rock, just appearing above the ground on the top of this knoll and measuring, as far as at present exposed, $4\frac{1}{2}$ feet long, 3 feet 3 inches broad, and 6 inches high, is a group of nine undoubted and four probable cup-marks (Pl. XXXIV, 2). These cups all lie on the south-east half of this outcrop, which runs roughly east and west (fig. 5). The two largest of the well-defined cup-marks are at the most westerly and the most easterly points of the group, and, being slightly oval in shape, measure respectively $4\frac{3}{4}$ inches by $4\frac{1}{4}$ inches in diameter and $1\frac{1}{2}$ inch deep, and $4\frac{7}{8}$ inches by $4\frac{3}{8}$ inches in diameter and $2\frac{1}{8}$ inches deep. The smallest of the probable examples is $1\frac{3}{8}$ inch in diameter and $\frac{1}{4}$ of an inch deep, and lies at the north-west corner of the group. Situated on the line of a crack are two depressions, as large as the average of the undoubted cups, which, owing to their rather rough shape, have not been included as cup-marks, but it is quite possible that they once were semi-spherical and have later been made irregular by small flakes having weathered away. The late Dr Erskine Beveridge noted fifteen cups on this site, so it is obvious that he classified these two depressions as cup-marks. He adds that the rock on which they appear "lies 100 yards from the shore, and can therefore bear no relation to another quite separate type of 'shell-bait basin.'" ¹

9. Half a mile south of Loch nan Clachan and about the same distance south-west of Claddach Vallay, at about 200 feet above sea-level, is a large grass-covered knoll, Buaille Risary, the site of a dun about half a mile north of Ben Risary. Lying in the steep northern side of this mound, towards its east end, is a large irregular shaped stone slab, its major axis running in a line pointing north-north-west and south-south-east, whose eastern and southern sides are level with the surrounding ground, while fully 9 inches of its western side is exposed. The fairly smooth, though much weathered surface of this stone, which slants slightly to the north-west, is roughly pear shaped and measures 4 feet 5 inches long and nowhere more than 2 feet 4 inches broad (fig. 6). Towards its north corner is a group of six well-defined and three probable cup-marks, the largest of which is slightly oval in shape and measures $3\frac{1}{8}$ inches by 3 inches in diameter and $\frac{7}{8}$ of an inch deep. The three probable examples are all $1\frac{1}{8}$ inch in diameter and $\frac{1}{4}$ of an inch deep, and form a triangle whose sides measure $2\frac{1}{2}$ inches, $2\frac{3}{8}$ inches, and 4 inches in length. Three of the certain cups are touching each other, and lie in a line running roughly north-north-east and south-south-west.

10. At the top of a knoll about 20 yards north of Teampull Clann

¹ *North Uist*, etc., p. 275.

a' Phiocair at Carinish (a township situated on a peninsula jutting out from the south-west corner of North Uist) is a small flat outcrop of rock or possibly a boulder, on which are cut, 8 inches apart, two cup-marks 4 inches in diameter, and $1\frac{1}{8}$ inch and $\frac{7}{8}$ of an inch deep respectively. One of the cups is at the edge of the area of rock at present exposed, and

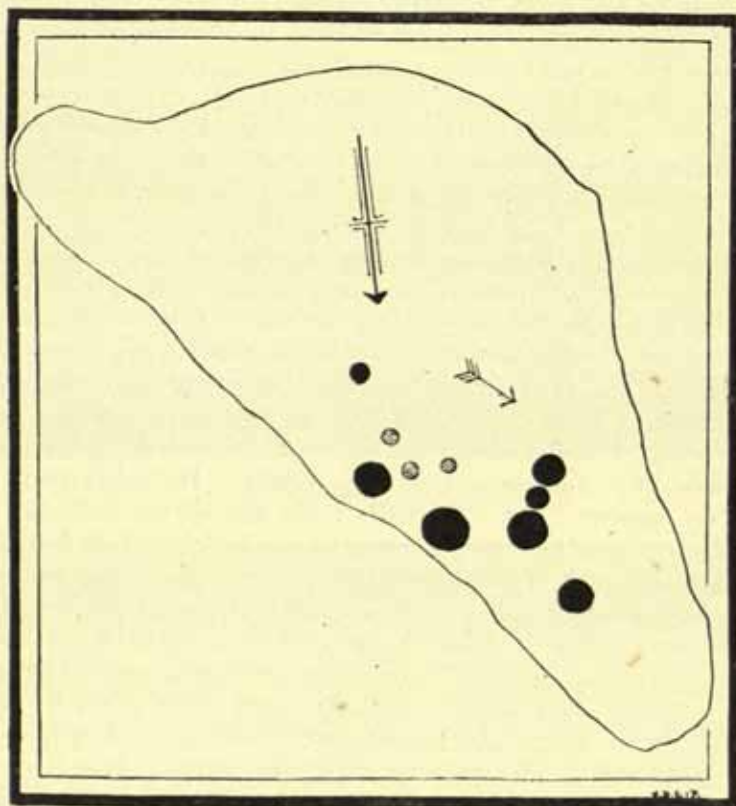


Fig. 6. Stone slab, Bualle Risary.

periodically becomes covered over with turf, while the other cup lies roughly in the centre of the smooth surface of the outcrop. It is stated in the *Inventory of Monuments and Constructions in the Outer Hebrides, Skye and the Small Isles*¹ that these two cups lie "in a line running almost due north and south ($17\frac{1}{2}^{\circ}$ mag.)," and it is not improbable that some special significance may be attached to this fact. Nowhere else in North Uist did I notice any other cups so well formed which were, despite their unusual width, so relatively shallow.

11. On a level and comparatively smooth outcrop, $5\frac{1}{2}$ feet long, 3 feet

¹ P. 85, No. 260.

10 inches wide, and not more than 2 inches high, which lies some 150 yards south-south-east of Teampull na Trionaid (connected by a vaulted passage with Teampull Clann a' Phiochair) and 30 yards west-north-west of the crofter's house nearest the "Temple," is one large cup measuring $4\frac{3}{4}$ inches in diameter and $2\frac{3}{4}$ inches deep. This cup has not to my knowledge been previously recorded, and is of special interest because of its proximity to the two cups last mentioned, which are of such similar shape. This one cup and its two neighbours, lying a little over 30 feet away, are the only known examples on North Uist which are entirely isolated on their respective outcrops, and not bordered by other cup-markings.

12. Benbecula may for the purposes of this paper be regarded as a large tidal island separated from the south coast of North Uist by a shallow but wide and complicated strait called the North Ford, which is studded with islets, and can in fine weather be crossed at low water with comparative ease. On the north shore of Benbecula, about $2\frac{1}{2}$ miles as the crow flies south-east of the Gramisdale Temperance Hotel situated at the south end of the North Ford, is a high rocky knoll called Hacklett, lying on the east side of an inlet forming part of the Sound of Flodday. On the summit of this knoll, which is some 400 yards north of Loch an Tairbh, at an elevation of 50 feet above sea-level, is a large slab of grey gneiss, lying almost exactly south-west and north-east and measuring 10 feet 2 inches in length, $5\frac{1}{2}$ feet in breadth, and varying from 8 inches to 1 foot in thickness. As the level of the soil below this stone appears to have changed during the last sixty years, it may not be out of place to give extracts from the accounts written by A. A. Carmichael in 1870 and William Jolly in 1881. The former, who in 1867 discovered this, the first cup-marked stone found in the Outer Hebrides and strangely enough the only one yet noted in Benbecula, says its "under side is perfectly level, with a granular surface. The upper side is nearly but not quite level, and smooth and weather-beaten on the surface." (By "level" it is not here meant that the surface of the slab was horizontal, but rather that it was all in one plane.) "This granite slab rests upon the edge of a low bank. A passage runs under the slab, and the first time I saw it the slab formed the roof of a piggery. The slab slopes towards one side and one end. On the upper edge it rests on the ground about the centre, both ends being free; and on the lower edge it rests upon the ground from the centre to the end. This is the edge and end towards which the slab inclines, and upon which it mainly rests."¹ William Jolly appears to have noted the stone under similar conditions, for he states that it was "supported on others like a 'cromlech.'"² Although this stone still occupies its position as described by A. A. Carmichael, there is now no passage running under it, and the ground has so silted up that it was only with difficulty that the several

¹ *Proc. Soc. Ant. Scot.*, vol. viii. p. 285.

² *Ibid.*, vol. xvi. p. 400.

large blocks on which it rested were identified. *The Inventory of Monuments and Constructions in the Outer Hebrides, Skye and the Small Isles*¹

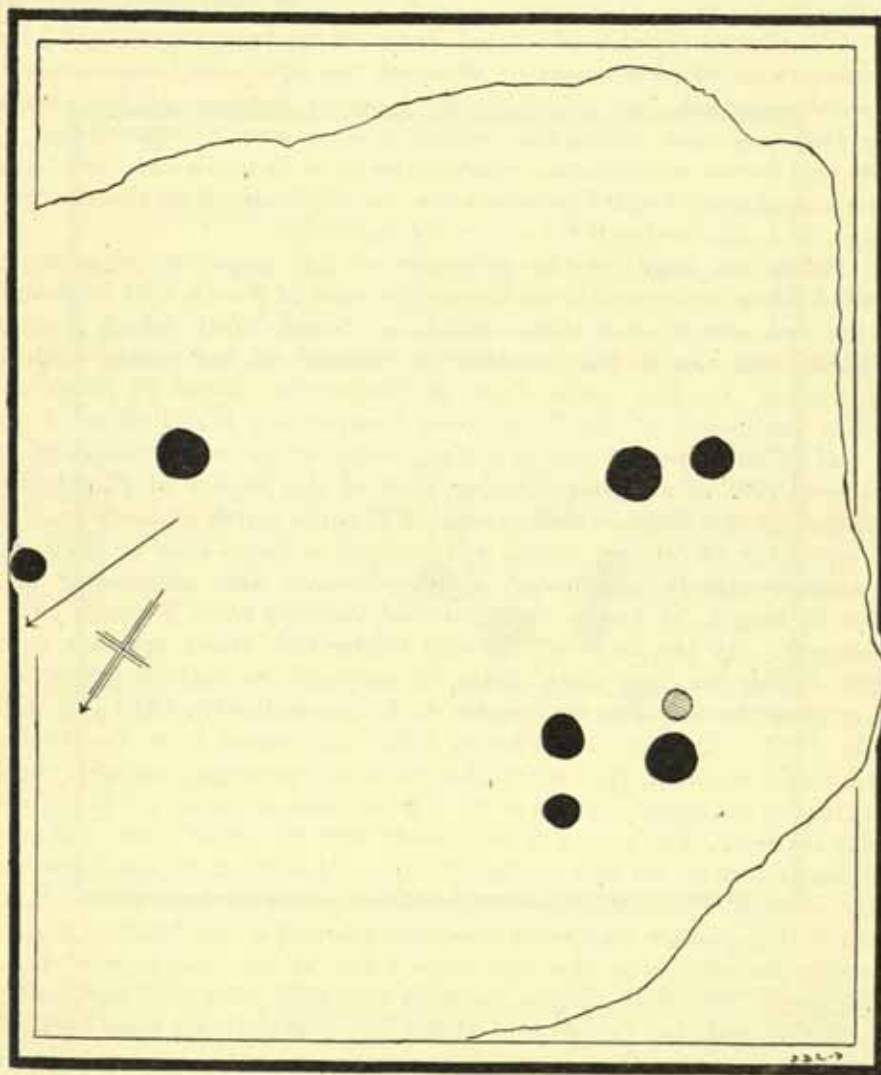


Fig. 7. Stone slab, Hacklett, Benbecula. *N.B.*—Long arrow indicates the position of an outlying cup 5' 7" from the centre of cup near point of arrow.

mentions that the slab is "apparently a standing stone which has been overthrown," and its present position certainly is most suggestive of this. However, if some slight excavations were carried out, it is very possible

¹ P. 104, No. 355.

that the puzzling question as to whether this slab forms part of a cromlech or is an overthrown standing stone would be solved.

On the upper half of this stone, on its present superior surface, are nine hollows, of which eight are almost certainly cup-marks (fig. 7). The two largest cups are slightly oval in form and both measure $3\frac{3}{8}$ inches by 3 inches in diameter and $\frac{5}{8}$ of an inch deep; while the probable example is 2 inches by $1\frac{3}{8}$ inch in diameter and $\frac{3}{8}$ of an inch in depth. The incised circle—the only one so far seen in the Outer Hebrides in connection with cup-markings, with the possible exception of the incisions on “Clach na Croise” at Middlequarter—noted by A. A. Carmichael and William Jolly as being “carved at one end, evidently made subsequently to the cups,”¹ could not be discovered, although with a more favourable light and the surface of the stone slightly wet it is quite possible that it could still be seen. However, lying at the extremity of the north corner of the stone and 5 feet 7 inches from the nearest cup of the main group, an isolated cup was discovered, previously I believe unrecorded, which was 2 inches in diameter and $\frac{1}{2}$ an inch deep.

A. A. Carmichael states that “on one side of the slab, the knoll is seemingly composed of stones and earth, and I fancy there are some passages, while on the other side, at the end of the slab, the mound is cut away to the level of the surrounding ground for the site of a house, the walls of which are still standing.”² However, it can now only be said in the words of the *Inventory of Monuments and Constructions in the Outer Hebrides, Skye and the Small Isles*,³ that “it is quite impossible to determine the character of the original structure which doubtless occupied this site, as it has been despoiled to build the house and enclosures on the eastern slopes of the knoll.” It is striking that the position occupied by the cup-marked slab commands an extensive view in every direction, especially towards the North Ford with its varied, picturesque shores.

13. On the south-east slope of Beinn Langass, about 250 yards from its summit, is a megalithic site, marked upon Wm. Johnson's map of 1822⁴ (of which this Society is fortunate enough to possess a copy) under the name of “Baishunes Grave.”⁵ Here are to be seen two large thin slabs lying one on top of the other, and separated towards the west by a third and smaller stone fixed between them. The smooth upper slab measures 8 feet 4 inches by 4 feet, with a thickness of $4\frac{1}{2}$ inches, while the large one upon which it chiefly rests has a length of $7\frac{1}{2}$ feet, a width of $6\frac{1}{2}$ feet, and a thickness of about 1 foot 3 inches. These large slabs lie over a hollow and seem to be supported at both ends by some lesser stones. The cup-marks which the late Dr Erskine Beveridge noted as being on these

¹ *Proc. Soc. Ant. Scot.*, vol. xvi. p. 400.

² *Ibid.*, vol. viii. p. 285.

³ P. 104, No. 355.

⁴ Edinburgh, published by John Thomson & Co.

⁵ “The name ‘Baishune’ has given some difficulty, but we are told that Baistain represents a still common Uist form of ‘Archibald,’” *North Uist*, etc., p. 257.

slabs were apparently later not visible, for there is no mention of them in the *Inventory of Monuments and Constructions in the Outer Hebrides, Skye and the Small Isles*. However, when I visited the site in August 1931, I luckily noticed half of one of these cups showing through a thick growth of coarse grass and moss. On this accumulation of many years being stripped off, the cups, of which so admirable an account is given in *North Uist, its Archaeology and Topography*,¹ were laid bare. There is a cup-mark on each of the west corners of the upper slab, from the more southerly of which a groove—an inch deep at its commencement but gradually tailing off—leads for a distance of 3 feet to almost the opposite edge of the slab. The lowest and also the smallest slab have each a single cup-mark on their south-west corners. Of all the cup-marked sites in North Uist, this provides one of the few examples of what may be called symmetrical arrangement of the cup-markings, and also the only instance recorded of a channel radiating from a cup.

14. On the whole east coast of North Uist only one group of cup-markings is to be recorded. As the present writer was unable to visit this site, the following description by the late Dr Erskine Beveridge is given: "As a doubtfully reported Barp, although without any apparent claim to the title, a site in the Portain district has been noted as more probably that of a cist. At the east base of a cliff, amidst many fallen rocks, is one slab which bears a row of four cup-marks along its edge and is supported by other stones which seem to have been artificially placed."² This writer further adds: "At Portain, upon the covering slab of a supposed cist west of Loch Grota, are four cup-marks, three of them in a row near its edge, the other being smaller and out of line."³ Portain, one of the least frequented districts of North Uist, lies immediately north of Lochmaddy Bay and covers an area of about 8 square miles. Loch Grota is situated directly south of Loch Hacklett, being joined to the latter by a stream not 100 yards long. This cup-marked stone is not, I believe, mentioned by any antiquarian besides the late Dr Erskine Beveridge; the scanty account of the situation given by him not having allowed His Majesty's Commissioners to locate the site.

CONCLUSION.

Seventy-five years ago not a single cup-marking was noted in the whole of the Outer Hebrides, while until thirty years ago only two sites, one in North Uist and one in Benbecula, had, I believe, been recorded. It was almost entirely due to the energies of the late Dr Erskine Beveridge and His Majesty's Royal Commissioners for Ancient Monuments that by 1915 twelve groups, comprising over eighty cups, had been discovered. Although only three groups of cup-markings, which do not lie in the vicinity

¹ P. 274.

² *North Uist, etc.*, p. 269.

³ *Ibid.*, p. 274.

CUP-MARKED STONES OF NORTH UIST AND BENBECULA. 143

of previously discovered sites, are described for the first time in the present survey, many additional cups have been noted either on rock faces already known to contain these markings or on outcrops immediately adjoining them. However, one of the three groups mentioned as an addition to the list contains many more cup-markings than are even now recorded throughout the whole of the rest of North Uist. As a tabular summary has been annexed, only a brief statement is here given of the number of cup-marks found up to the present in that portion of the Outer Hebrides which lies south of the Sound of Harris.

Specimens of cup-marked groups have been chronicled in thirteen different localities in North Uist, while one only is recorded in Benbecula. In all, one hundred and eighty-five certain cups, sixty-two probable, and seven doubtful examples have been noted in North Uist, and there is every reason to believe that this number could be doubled without exhausting all the cup-markings still existing on this island. The fact that only one cup-marked group has been found in Benbecula, far from being valuable as negative evidence, points merely to the total absence of any systematic and exhaustive investigation.

My sincere gratitude is due to the representatives of the late Dr Erskine Beveridge, who have most kindly allowed the reproduction of a photograph of cup-marks now no longer visible.

TABLE SHOWING THE NUMBER OF CUP-MARKS NOTED ON EACH SITE.

Locality of Cup-marked Groups.	Number of Cups at present Recorded.			Number of Cups noted by the late Dr Erskine Beveridge.	Number of Cups noted by His Majesty's Royal Commissioners.	
	Certain.	Probable.	Doubtful.		Certain.	Probable.
1. South end of Boreray . . .	5	3	..	3	4	
2. Oban Skibinish, Grenetote . .	3	..	..	3	..	3
3. East shore of Ard a' Bhorain . .	24	..	..	24	20	
4. Scolpaig House, Scolpaig . . .	5	..	..	..	5	
5. Tigh na Croise, Middlequarter . .	10	10	..	..	6	3
6. Post Office, Sollas . . .	1	2	..	..
7. Ceann Uadhdarach, Vallay . . .	111	40	5			
8. Bochin and Bachin, Vallay . . .	9	4	2	15	10	
9. Northern slope of Buaile Risary . .	6	3	..	4	7	
10. Clann a' Phiocair, Carinish . . .	2	..	..	2	2	
11. Teampull na Trionaid, Carinish . .	1	..	..	..
13. Baishune's Grave, Beinn Langasa . .	4	..	..	4		
14. Loch Grota, Portain . . .	4	..	..	4		
Total for North Uist. . .	185	62	7	59	54	6
12. Hacklett, Benbecula . . .	9	1	..	Not within scope of this book.	5	3
Total for all of the Outer Isles south of the Sound of Harris.	194	63	7	..	59	9

TABLE SHOWING THE NUMBER OF CUPS AND CUP-MARKED GROUPS, WHICH HAD BEEN NOTED BY THE END OF FIVE DIFFERENT PERIODS.

Year.	No. of Groups Recorded.	No. of Certain Cups.	Probable.	Doubtful.
1866	0	Not stated.		
1867	1			
1881	2			
1911	8			
1915	11		9	
1931	14	194	63	7

X.

UNPUBLISHED TOKENS OF THE CHURCH OF SCOTLAND. BY
R. KERR, M.A., F.S.A.Scot., CURATOR OF COINS, AND J. R.
LOCKIE, F.S.A.Scot.

To all interested in communion tokens the publication, in the Society's *Proceedings* for 1906-07, of the paper by the late Mr A. J. S. Brook, F.S.A.Scot., on "Communion Tokens of the Established Church of Scotland: Sixteenth, Seventeenth and Eighteenth Centuries," was an event of outstanding importance. Although Mr Brook made only the modest claim that his paper might be said to contain "a fairly representative collection of descriptions and drawings of the tokens of the period dealt with," his list, including, as it did, over 1400 tokens, was so comprehensive that it at once became the standard work of reference on the subject of the earlier tokens of the Church of Scotland, and such it has remained ever since.

During the period of over thirty years since the publication of Mr Brook's paper, however, many additional tokens of the Church and period concerned have been noted. It has seemed to us, therefore, to be a useful object to compile as extensive a list of such tokens as possible, and to illustrate it fully, with a view to its publication and use as a supplement to Mr Brook's original catalogue. We, of course, do not claim to have achieved completeness. We recognise that many tokens of the period concerned must have disappeared entirely; many must have escaped

our notice; and we are only too well aware that many others exist which we have not been able to identify. Mr Brook's remark to the effect that it would not now be possible to compile any paper on the subject that could be described as complete seems to us to be still valid.

The lines laid down in Mr Brook's paper have been followed in ours, the tokens being described on the same system, their measurements being similarly given in sixteenths of an inch, and the same artistic conventions being observed in the drawings. We have, however, thought it helpful to make a slight departure from Mr Brook's model by adding at the end of each description the name of the collection in which the particular specimen concerned was found, or of the work in which it has been described. The fact that only one collection is mentioned in each case is not, of course, intended to suggest that the token described is unique; in fact, many of the tokens in our list are to be found in several collections.

It was inevitable that in a pioneer work like Mr Brook's there should be a number of errors. Doubtless many of these would have been corrected by the author himself, had it not been for his unexpected death before his final revision of the proofs of his paper. In some cases, descriptions and drawings were made from imperfect specimens. In other cases, trade tokens or tokens of Secession Churches were mistaken for those of parish churches. There were also a few purely clerical or typographical errors. As a preliminary to our supplement we have noted such mistakes in the form of a list of corrections of Mr Brook's paper. We have also been able to identify some of the tokens of disputed attribution, the drawings of which appear at the end of Mr Brook's work, and these identifications are appended to the list of corrections.

Where definite evidence as to origin is not provided by the inscriptions on tokens, or by the preservation of specimens at the church where they were used, it is usually difficult, and often impossible, to be positive about the correctness of their attribution to particular localities. Whenever possible, we have checked and verified attributions, but we have had to rely to a great extent on traditional information, unsubstantiated by actual proofs. When attributions have seemed to us unreasonable, or have given rise to irreconcilable differences of opinion amongst collectors, we have thought it best to describe the specimens concerned as "unidentified." Descriptions and drawings of a comparatively small number of such tokens, as well as of others of whose origin all trace has been lost, have been included at the end of our catalogue. We will welcome any information which may lead to the identification of these doubtful specimens.

The notes on communion tokens of the Established Church compiled by the late Rev. Dr Thomas Burns have been of considerable value to us in our work. Dr Burns's notebooks, which accompanied the collection of tokens given by him to the Church of Scotland, are those of a keen collector

- P. 485 (35). Avoch. (Illustration 76.) The **V** on *rev.* is not a table number, but the second letter of the name of the parish.
- P. 486 (36). Balmaghie. (Illustration 92.) The initials on *obv.* are **BMG** (for Balmaghie).
- P. 487 (37). "Belhelvie," 1725. (Illustration 105.) Ascribed by Dr Burns and other authorities to Bellie-Fochabers.
- P. 489 (39). Broughton, 1753. (Illustration 134.) This is not a communion token, but a colliery check used at Broughton, Cumberland. (See Davis and Waters' *Tickets and Passes*, 1922, p. 284.)
- P. 491 (41). Carnbee. (Illustration 169.) The object represented in the centre of *rev.* is a communion cup, not a sand-glass. Cp. p. 466 (16), where it is correctly described.
- P. 493 (43). "Closeburn," 1727. (Illustration 191.) "Never known in Closeburn" (Whitelaw, p. 57, No. 91). Burns attributes this token to Carstairs.
- P. 494 (44). Colvend and Southwick. (Illustration 204.) Between **C** and **S** on *obv.* is "&."
- P. 495 (45). Crailing. (Illustration 223.) The initials **C N** on *obv.* stand for Crailing and Nisbet, the full name of the parish.
- P. 495 (45). Cromdale. (Illustration 238.) The letters on *obv.* are **CP**.
- P. 500 (50). "Duffus," 1728. (Illustration 317.) Should be Dumfries (Whitelaw, p. 58, No. 101).
- P. 500 (50). Dumfries, 1790. (Illustration 321.) The initials on *obv.* are **RD**, for "Relief, Dumfries." A Secession Church token (Dick, 279).
- P. 500 (50). "Dunbarney," 1762. (Illustration 324.) This is a U.P. Church token of Dunblane and Menteith (Bridge of Teith), not mentioned by Dick. The two Congregations were united under one minister from 1758 to 1765. The close resemblance to the old Dunblane Parish tokens will be noted.
- P. 502 (52). "Duthil," **CP**. (Illustration 359.) This is probably Cromdale, found amongst the tokens of the neighbouring parish of Duthil.
- P. 503 (53). Eassie and Nevay, 1771. (Illustration 366.) The correct reading of the inscription is **E | I · O | 1771**. (See Alphabetical List of tokens below.)
- P. 503 (53). Ecclesmachan, round. (Illustration 368.) The date on *rev.* is 1705.
- P. 504 (54). Edinburgh (Canongate) with **CANONGATE** in straight line across token. Probably a trade token. Cp. Dalton and Hamer: *Provincial Token Coinage of the Eighteenth Century*, p. 450, No. 184.
- P. 505 (55). Enzie. (Illustrations 396 and 397.) The minister at Enzie from 1776 to 1784 was William, not Alexander, Gordon. The initials **MAG** are those of Mr Alexander Gray, minister of Enzie, 1789 to 1794, and subsequently (1794 to 1823) of Ordiquhill, where similar tokens were used. Compare Ordiquhill (Ill. 235) in Alphabetical List of tokens below. See "Communion Tokens in the Presbytery of Fordyce," in *Banffshire Journal* of September 13, 1881.
- P. 506 (56). Farr. (Illustration 413.) The date is 1762. See illustration in Alphabetical List of tokens below.
- P. 507 (57). Fordyce. (Illustration 431.) Alexander Irvine was minister at Cullen from 1705 to 1716, and at Fordyce from 1716 to 1746.
- P. 511 (61). Gretna. (Illustration 497.) This token has a *rev.* as follows:
I Cor. | XI. 23.
- P. 511 (61). Haddington. (Illustration 507.) The name on this token is spelt **HADINGTOUN**.

- P. 512 (62). Houston and Kilallan. (Illustration 519.) This token has a *rev.* as follows: **JM**, in script letters, for John Monteath, minister 1781 to 1843; border of scrolls.
- P. 513 (63). Inverarity. (Illustration 532.) Above **INR** is the letter **C** and below is **T**, for Communion Token.
- P. 513 (63). Inveresk. (Illustration 536.) The monogram is probably **MIWIK**, for Mr John Williamson, Inveresk Kirk (minister 1702 to 1740).
- P. 514 (64). Inverkip, 1764. The "square panel divided by two perpendicular lines in centre" is intended to represent an open Bible.
- P. 514 (64). Johnstone (Dumfries). (Illustration 549.) The initials on *obv.* are **J^NK**.
- P. 517 (67). Kilmarnock, 1778. This is a Secession Church token. (Dick, 526.)
- P. 519 (69). Kinglassie, 1747. (Illustration 632.) The *rev.* is as follows: **M | IC** for Mr John Currie, minister 1705 to 1750.
- P. 520 (70). "Kintail," 1776. The attribution is wrong. The token is correctly placed and described under Latheron (Illustration 711).
- P. 521 (71). "Kirkconnel." (Illustration 657.) "Unknown to author and locality" (Whitelaw, p. 74, No. 166).
- P. 524 (74). Lanark, 1733. (Illustration 703.) The first line on *obv.* is **LANK**, the **N** and **K** in monogram.
- P. 524 (74). "Lanark," 1735. (Illustration 704.) Ascribed by Dr Burns and other authorities to Lesmahagow.
- P. 524 (74). Largo, 1730. (Illustration 709.) The token has been misdrawn and misdescribed; the "thistle-like ornament" between **L** and **R** on *obv.* is a lower-case letter **a**.
- P. 527 (77). Logie. (Illustration 747.) The date 1696 is shown correctly in the illustration, but given incorrectly in the text.
- P. 527 (77). "Logie (Dunblane)," 1723. This token is of Larbert and Dunipace. (See description and illustration in Alphabetical List of tokens below.)
- P. 530 (80). Meldrum, Old. (Illustration 795.) The token illustrated appears to have been mis-struck. The sunk panel is circular, and the correct reading of the inscription around the edge is: **KIRK of MELDRUM, 1745. HL: IL::** in centre, horizontally, in script lettering: Remember | Christ died | for you. (For illustration see Anderson, Pl. V, No. 13.)
- P. 537 (87). Pitsligo. The correct date is 1791.
- P. 541 (91). St Andrews, 1753. (Illustration 971.) The initials on *rev.* are **M | IB**. A Secession Church token (Dick, 762).
- P. 541 (91). St Cyrus. (Illustration 979.) Wrongly dated in both text and illustration. The correct date is 1734.
- P. 542 (92). Shotts. (Illustration 999.) The illustration is of an imperfect token, and the date given in the text is wrong. The correct date is 1756.
- P. 543 (93). Sorn. It is the second, not the first, of the Sorn tokens described which appears in illustration 1018.
- P. 544 (94). Stair. It is the second, not the first, of the Stair tokens described which appears in illustration 1027.
- P. 544 (94). Stevenston. (Illustration 1029.) The second **S**, and both **N**'s, of **STIVENSTOUN**, are retrograde. Brook's drawing appears to be of an imperfect token. Complete specimens have a serrated border, and are square, 12.
- P. 545 (95). Stracathro. (Illustration 1040.) The drawing is of an imperfect

- token. The token bears the date 1696, 16 being to the left, and 96 to the right, of the monogram.
- P. 548 (98). "Tongland." (Illustration 1085.) This is probably a token of St Andrews-Lhanbryde. (See Whitelaw, p. 66.)
- P. 550 (100). Urr. (Illustration 1123.) The description and drawing are of an imperfect token. The correct reading of *obv.* is **UK** | 1728.
- P. 551 (101). Whithorn. (Illustration 1144.) It is probable that there is no Whithorn token with date 1704, and that this is a misrepresentation of the token dated 1707.

IDENTIFICATIONS OF BROOK'S "TOKENS OF DISPUTED ATTRIBUTION."

- P. 603 (153), Row 1, No. 1. *Obv.* **LK** | 1718. Burns attributes to Liberton, Edinburgh. This token has also been attributed to Lasswade.
- " " " No. 3. *Obv.* Monogram between 9 and 6. Burns attributes to Kirknewton. This token has also been attributed to Kirkhill.
- " " Row 2, No. 1. *Obv.* **KK** in monogram. Kilbucko (Broughton).
- " " " No. 3. *Obv.* **TK** | 1748. Tynron. (Whitelaw, p. 112 (92).)
- " " Row 3, No. 1. *Obv.* **BL**. Irish: Ballylennon.
- " " " No. 2. *Obv.* **MLM**. Canada: McLennan's Mount.
- " " " No. 3. *Obv.* **AD**. Irish: Aghadoey.
- " " Row 4, No. 3. *Obv.* **S.T.B.T**. Irish: Balteagh.
- " " Row 5, No. 2. *Obv.* **LC**. Irish: Grey Abbey.
- " " Row 6, No. 1. *Obv.* **M** | **DS** | **A** | 1767. Avondale (Secession).
- P. 604 (154), Row 2, No. 2. *Obv.* **GK** | 1723. Girthon. (St A.)

ALPHABETICAL LIST OF TOKENS.

ABBOTRUE. *Obv.* **AK** in monogram. *Rev.* 17 | 72. Square, with cut corners and serrated borders, 13. Perth. Illustration 1.

ABDIE. *Obv.* **A**, large ill-defined capital. Irregularly round, 15. Brown. Illustration 2.

ABDIE. *Obv.* **ABDY** | 1725. *Rev.* **M** | **IW**, for Mr Josias Walker, minister 1721 to 1745. Oblong, with borders, 10 × 8. C. of S. Illustration 3.

ABERCORN. *Obv.* **AR**, incuse. Oblong, with rounded corners, 12 × 7. Cox. Illustration 4.

ABERDALGIE. *Obv.* **A** · | 1711. Square, with border, which has six "teeth" projecting inwards, 9. R.S.M. Illustration 5.

ABERDEEN (Old Machar). As Brook 6, but the loaf of bread is not so long, and the beaded oval is composed of fewer and larger dots. Square, 13. R.S.M. Illustration 6.

ABERDEEN (Old Machar). As Brook 6, but without loaf of bread on *obv.* R.S.M.

ABERDEEN (West Kirk). As Brook 7, but much larger. Oblong, 19 × 20. Glasgow.

ABERFOYLE. *Obv.* **ABERFOIL** (arranged in form of semi-circle) | **M^R** | **J.R.** | 1765 for Mr James Richardson, minister 1733 to 1770. Octagonal. Burns.

- ABERLADY. *Obv.* **AB | K**, incuse. Triangular, 12. R.S.M. Illustration 7.
- ABERLADY. *Obv.* **AB | K**, incuse. Round, 11. R.S.M. Illustration 8.
- ABERLADY. *Obv.* **AB**. *Rev.* **K**. Sunk relief. Round, 12. R.S.M. Illustration 9.
- ABERNETHY. *Obv.* **A · N**. Oblong, with serrated border, 11 × 8. Perth. Illustration 10.
- ABERNYTE. *Obv.* **A**, with bar across top of letter; a dot above and at each side; two dots below. Round. Burns.
- ABOYNE. *Obv.* **AB** in monogram. Square, 14. Anderson, p. 5.
- AIRDRIE. *Obv.* **AIRDRIE CHAPEL**, with rosettes as stops, on plain circular band; in centre, 1799; arrowhead ornaments at corners. Square, cut corners, 13. R.S.M. Illustration 11.
- ALLOA. Both sides blank. Heart-shaped, 14 × 14. Cox.
- ANNAN. *Obv.* **AK** in monogram. Square, with border, 11. R.S.M. Illustration 12.
- APPLEGARTH. *Obv.* **A · K**. Oblong, cut corners, with border, 16 × 13. C. of S. Illustration 13.
- ARBIRLOT. *Obv.* **M | RP**, for Mr Robert Preston, minister 1731 to 1758. Square, with border. Burns.
- ARDERSIER. *Obv.* **ADERSIER**, incuse, around edge. Round, 15. R.S.M. Illustration 14.
- ASSYNT. *Obv.* **A**. Round. Burns.
- ATHELSTANEFORD. *Obv.* **AK**, with bar across top of **A**. Square. Burns.
- AUCHTERDERRAN. *Obv.* **A**, with bar across top of letter; large grotesque capital. *Rev.* 1716. Oblong. 10 × 9. R.S.M. Illustration 15.
- AUCHTERGAVEN. *Obv.* **AP**. Letters close together, no star between. Almost square, with serrated border, 10. R.S.M. Illustration 16.
- AUCHTERHOUSE. As Brook 70, but larger, and with larger lettering. Round, 13. R.S.M.
- AUCHTERMUCHTY. *Obv.* **AWC | HTR | MWC**. *Rev.* **M | AG**, for Mr Alexander Glas, minister 1691 to 1700. Upright oblong, with borders, 9 × 10. C. of S. Illustration 17.
- AULDEARN. *Obv.* **AULDARN 1796**, around edge. *Rev.* **AMO | AMO**, below a rude representation of the "Burning Bush." Round. Burns.
- AVOCH. *Obv.* **A**. Square. Burns.
- AVOCH. *Obv.* **A**, incuse. *Rev.* **W**, incuse. Round, 13. Perth. Illustration 18.
- AYR. *Obv.* **AIR | 97** (for 1697). Square, with double border, 9. Glasgow. Illustration 19.
- BALDERNOCK. *Obv.* **B**, script capital, with indeterminate ornament at either side. Square, with border, 9. Cox. Illustration 20.
- BALLINGRY. *Obv.* A letter resembling an S reversed | **IM**, for James Martin, minister 1669 to 1684. Square. Burns.
- BALLINGRY. *Obv.* **RB**, for Robert Balfour, minister 1719 to 1773. Square, with wide border, 10. C. of S. Illustration 21.

BARA. *Obv.* **BA** | **RA**, with **K** in centre; rude lettering. Oblong, with border, 10 × 9. R.S.M. Illustration 22.

BARR. *Obv.* **BAR**. Oblong. Burns.

BATHGATE. *Obv.* **B^T**. *Rev.* 1776. Square. Burns.

BENDOCHEY. *Obv.* **·M·** | **I·R**, within square sunk panel with rounded corners, for Mr James Ramsay, minister 1700 to 1746. Diamond-shaped, 13, point to point. Cox. Illustration 23.

BENHOLM. *Obv.* **KB** | 1718, with small ornament between the initials; all in sunk circular panel. Round, 17. Aberdeen. Illustration 24.

BERVIE. *Obv.* **M** | **WC**, in sunk circular panel, for Mr William Chalmers, minister 1670 to 1674. Square. Burns.

BLAIR-ATHOLL. *Obv.* **BLAIR** | **ATHOL** | 1757. Square, with border, 11. C. of S. Illustration 25.

BOHARM. As Brook 122, but on much smaller flan. Square, 8. R.S.M. Illustration 26.

BORTHWICK. *Obv.* **BK**, with star above and below. *Rev.* 1708, with star above and below. Round. Burns.

BOTHWELL. *Obv.* **BOTHWEL PARI** . . . (rest indecipherable, but, according to Burns, the legend is **BOTHWEL PARISH KIRK**) on plain circular band; in centre, **M** | **W. H** | 1714, for Sir William Hamilton, Bart., minister 1709 to 1749. Square, 12. St A. Illustration 27.

BOTHWELL. *Obv.* **BOTHWELL KIRK 1750**, on plain circular band; in centre, **M^R** | **I^H**, for Mr James Hamilton, minister 1747 to 1760; ornaments at corners. Square, 12. N.M.A. Illustration 28.

BOURTIE. *Obv.* **M** | **GG**, for Mr George Gordon, minister 1723 to 1743. Square. Burns.

BOWDEN. *Obv.* **BK**, incuse. Oblong, 9 × 8. Brown. Illustration 29.

BOWER. *Obv.* **Bower**. *Rev.* 1794. Oval, with border, 17 × 13. Aberdeen. Illustration 30.

BRECHIN. *Obv.* **BREC** | **HIN**, with horizontal line above and below. The **N** is retrograde. Round, with border, 16. Glasgow. Illustration 31.

BRECHIN. *Obv.* **16·98** | **·B·N·** | **·K·**. *Rev.* A rose displayed. Round, with borders of dots, 13. Perth. Illustration 32.

BRECHIN. *Obv.* **BREC** | **HIN**, the **N** retrograde. *Rev.* **M** | **IW** | 1707, for Mr John Willison, minister 1703 to 1716. Square, with serrated borders, 12. C. of S. Illustration 33.

BRECHIN. *Obv.* **BREC** | **HIN**, as on preceding token. *Rev.* Blank. Square, with serrated border, 12. C. of S.

BRECHIN. *Obv.* **B** | **DB**, with scrolls at sides, for David Blair, minister 1738 to 1769. Square, with border. Burns.

BRECHIN. *Obv.* **B** | **M·I·B** | 1770, for Mr John Bisset, minister 1769 to 1797. Almost square, with border, 11. R.S.M. Illustration 34.

BROUGHTON. *Obv.* **B**, incuse. *Rev.* **K**, incuse. Round, 12. Cochran-Patrick. Illustration 35.

BURNTISLAND. *Obv.* **BURNT** | **ISLAND**. *Rev.* **M** | **IW** | 1779, for Mr James Wemyss, minister 1779 to 1822. Round, with borders of dots, 16. R.S.M. Illustration 36.

CAERLAVEROCK. *Obv.* **CL** in monogram. Round, without border, 12. Whitelaw, No. 83, with illustration.

CAMBUSNETHAN. *Obv.* **C · K** | 1723. Square, with border, 11. C. of S. Illustration 37.

CAMBUSNETHAN. *Obv.* **CAMBUSNETHAN**, on plain circular band; in centre, 1785. Square, with dotted border, 12. Aberdeen. Illustration 38.

CAMPBELTOWN. *Obv.* **CP**. Oblong, traces of border, 11 × 9. Cox. Illustration 39.

CARLUKE. *Obv.* **CARLUKE · 1755** ·, on plain circular band. Square, with dotted border, 12. C. of S. Illustration 40.

CARRINGTON (formerly Primrose). *Obv.* **PRIM** | 1738. *Rev.* **K**. Round, 15. C. of S. Illustration 41.

CARSTAIRS. *Obv.* **C · K** | 1727. Square. Probably the same token as Brook 191, which was wrongly attributed to Closeburn. Burns.

CAVERS. As Brook 178, but the **K** on *obv.* is smaller, being of the same size as the **C**, and there are no stars. *Rev.* 1699, with five-pointed star in front, three similar stars above, and three below. Round, 15. R.S.M.

COCKPEN. *Obv.* **C · K** | 1704. Irregular square, with rounded corners, 10. Perth. Illustration 42.

COLDINGHAM. *Obv.* **AB**, incuse; *Rev.* blank. **A B** for Andrew Bannatine, minister 1665 onwards. Shape and size not recorded. "Border Almanac," 1910, p. 27.

COLDSTREAM (?). *Obv.* **COL**. Oblong, with border, no measurements given. Paul, p. 129, with illustration.

COLLACE. *Obv.* **COLACE** | 1742. Round, 12. St A. Illustration 43.

COLLESSIE. *Obv.* **COL'SY** | 1718. *Rev.* **M** | **WP**, for Mr William Pitcairn, minister 1696 to 1722. Oblong, with borders, 11 × 8. Edges of *rev.* bevelled. Cochran-Patrick. Illustration 44.

COLVEND and SOUTHWICK. *Obv.* **C · S** | 1722, with horizontal line above letters, and between letters and date. Round, with border, 15. Slimon. Illustration 45.

CONTIN. *Obv.* **C**. Square, 10. Dundee. Illustration 46.

CRAIG (formerly Inchbrayock). *Obv.* **IB**, in sunk square, the ground of which is dotted. Round, 13. R.S.M. Illustration 47.

CRAIG (formerly Inchbrayock). *Obv.* **IB**. Round, with border of dots, 11. R.S.M. Illustration 48.

CRAIGIE. *Obv.* As Brook 219, but letters and figures smaller, and more regularly formed. Square, with border, 10. Cox.

CRAIGNISH. *Obv.* **C**. Oblong. Burns.

CRAMOND. *Obv.* **R** | **CA**, incuse. Round, 12. Found by the Rev. Dr Martin, Barony, Glasgow, in the manse garden at Cramond when he was minister there. Dundee. Illustration 49.

CRANSHAWS. *Obv.* **CRANSHAWS · KIRK** · on plain circular band around edge; in centre, rosette of six pointed leaves. *Rev.* **REV · ALEX · JOHNSTON** · on plain circular band around edge; in centre, 1792. The Rev. Alex. Johnston was minister from 1792 to 1801. Round, 13. Aberdeen. Illustration 50.

CRAWFORDJOHN. *Obv.* **CI** | 17 · 18. Oblong. Burns.

- CRIMOND. *Obv.* **OR**, incuse. Thin brass, square, 9. Perth. Illustration 51.
- CRIMOND. *Obv.* **CR**, repoussé. Thin brass, with border at top and bottom. Upright oblong, 7 × 9. Perth. Illustration 52.
- CRIMOND. *Obv.* **CR**. Lead, irregular square, with double border, 7. Perth. Illustration 53.
- CRIMOND. *Obv.* **CRI**, incuse. Thin brass, oblong, $8\frac{1}{2} \times 7$. Perth. Illustration 54.
- CRIMOND. *Obv.* **CRI**, repoussé. Thin brass, roughly square, 10. Perth. Illustration 55.
- CRIMOND. *Obv.* **CRI** | ✚ ✚, incuse. Thin copper, square, 12. Perth. Illustration 56.
- CRIMOND. As preceding token, but in thin iron, oblong, 14 × 11. Cox.
- CRIMOND. As preceding token, but in thin lead, oblong, 14 × 12. Cox.
- CROMARTY. *Obv.* **C** within dotted circle. Copper, round, with serrated border, 11. R.S.M. Illustration 57.
- CROMDALE. *Obv.* **CROM** | **DALLE**. Oblong, with traces of beaded border, 14 × 13. Glasgow. Illustration 58.
- CUMBERNAULD. *Obv.* **CUM . BND** (the letters arranged in an arc of a circle) | **1774**, incuse. Roughly rectangular, 16 × 15. R.S.M. Illustration 59.
- CURRIE. *Obv.* **CURRI**. Round, with bevelled edge, 11. Finlay. Illustration 60.
- DALKEITH. *Obv.* **DK** | **93** (for 1693). Irregular upright oblong, with border, 10 × 11. N.M.A. Illustration 61.
- DALKEITH. *Obv.* **DK** | **1705**. Square, with dotted border, and rounded corners, 10. N.M.A. Illustration 62.
- DALKEITH. *Obv.* **DK** | **1737**. Round, with border, 11. N.M.A. Illustration 63.
- DALKEITH. *Obv.* **DK** | **1742**. *Rev.* Representation of church. Round, with borders, 13. C. of S. Illustration 64.
- DALKEITH. *Obv.* **DK** | **1755**. *Rev.* Representation of church. Round, with borders, 14. C. of S. Illustration 65.
- DALKEITH. *Obv.* **D**, surmounted by coronet. *Rev.* **T**. Heart-shaped. Burns.
- DALLAS. As Brook 271, but without date. Square, 14. Brown.
- DALRY (Galloway). As Brook 274, but without **I** in centre of **D**. Square, with border, 12. Glasgow.
- DALZIEL. *Obv.* **Dalzel** | **RC** | **1798**, for Robert Clason, minister 1786 to 1801. Square, with double border, 12. R.S.M. Illustration 66.
- DAVIOT. *Obv.* **M** | **IC** | **DAVIOT** | **1732**, for Mr James Chalmers, minister 1731 to 1787. In sunk panel, which is roughly circular. Horizontal line above and below **DAVIOT**. **A** and **V** of **DAVIOT** in monogram. Square, 14. Glasgow. Illustration 67.
- DAVIOT. *Obv.* **M · I · C** | **DAV** | **IOT**. | **1749**, for Mr James Chalmers, minister 1731 to 1787. Square, 12. Anderson, p. 9, with illustration.
- DEER, NEW. *Obv.* **M^B W.T.** | **NEW. DEER** | **K** | **1737**, for Mr William Taylor, minister 1737 to 1797. Oblong, with border, 13 × 12. C. of S. Illustration 68.
- DEER, OLD. *Obv.* **OD** | **1714**. Square, with border, 12. Perth. Illustration 69.

DEER, OLD. *Obv.* **OD** | 1752. *Rev.* 5 (table number), incuse. Square, 12. C. of S. Illustration 70.

DOLLAR. *Obv.* **DK** | 1699, with horizontal line between letters and date. Square, with border, 11. C. of S. Illustration 71.

DOLPHINTON. As Brook 294, but *obv.* **DO · K**. R.S.M.

DOLPHINTON. As Brook 294, but **DoK** and date in smaller letters and figures, on smaller flan. Heart-shaped, 11 × 10. R.S.M.

DOLPHINTON. *Obv.* **DO · K**. *Rev.* 1769 or 1762, the 6 with a long tail stretching upwards and over the last figure; the last figure shaped like a long-tailed 9, but with a horizontal bar below, which may have been intended to make the figure a 2. Heart-shaped, 12 × 10. R.S.M.

DREGHORN. *Obv.* **DREG** | **HORN** | 1727. Oblong, with dotted border. Burns.

DREGHORN. *Obv.* **DREG** | **HORN** | 1730. Oblong. Burns.

DREGHORN. *Obv.* **DREG** | **HORN** | 1732, within border of dots in sunk panel. Square, with cut corners, 14. Cox. Illustration 72.

DUMBARTON. *Obv.* **DB** | 1701. Square, with border of large dots, 9. C. of S. Illustration 73.

DUMBARTON. *Obv.* **DB** | 1761. Square, with serrated border, 11. St A.

DUMFRIES. *Obv.* **DF** | 1733, with horizontal line between letters and figures. Irregular octagon, with thick border, 13. St A. Illustration 74.

DUMFRIES. *Obv.* **DFS** | 1743, with horizontal line between letters and figures. Irregular octagon, with thick border, 13 × 14. St A. Illustration 75.

DUMFRIES. *Obv.* **DF** | 1751, with horizontal line between letters and date. Oblong, with border, 11 × 12. C. of S. Illustration 76.

Note. Whitelaw gives three varieties of this token, Nos. 104 to 106.

DUN. *Obv.* **DUN** | **KIRK** | 1787. Square. Burns.

DUNBOG. As Brook 328, but on lozenge-shaped flan, 14 × 15. R.S.M.

DUNDEE. *Obv.* **DVNDEE** 1737 arranged in a circle around edge; in centre, pot of lilies. *Rev.* **TD IM IW** around edge, **M** in centre, for Messrs Thomas Davidson, minister (1st charge), 1732 to 1760; James Monro (3rd charge), 1729 to 1744; and John Willison (2nd charge), 1716 to 1750. Round, with borders, 14. C. of S. Illustration 78.

DUNDONALD. *Obv.* **D** | 1752. Square, with border of dots. Burns.

DUNLAPPIE (united to Stracathro in 1618). *Obv.* **D**. Round. Burns.

DUNLOP. *Obv.* **D · L · P ·** | 1750. Oblong, with double border, 12 × 10. Cox. Illustration 77.

DUNNET. *Obv.* **D^t**. *Rev.* 1786. Oblong. Burns.

DUNNET. *Obv.* **D**. *Rev.* 1799. Oblong, 10 × 11. Anderson, p. 38.

DUNNOTTAR. *Obv.* **DUNNOTTER** · around edge, 1782 in centre. The letters are larger than those on Brook 346. *Rev.* **Nº** | 4, incuse. Round, with double border, 16. R.S.M. Illustration 79.

DUNS. *Obv.* **DV** | **NS** inside a circle. Irregular oblong, 15 × 12. C. of S. Illustration 80.

DUNSCORE. *Obv.* **D**. Round, 11. C. of S. Illustration 81.

DUNSCORE. *Obv.* **DS** | 1726. Oblong, with border, 9 × 7. St A. Illustration 82.

DUROR. *Obv.* **D**. Square, 7. C. of S. Illustration 83.

DYCE. *Obv.* **DYCE**. Square, 12. St A. Illustration 84.

DYKE. *Obv.* **M** · | **WF** ·, probably for Mr William Falconar, minister 1674 to 1689. Irregular octagon, with dotted border, 12. N.M.A. Illustration 85.

EASSIE and NEVAY. *Obv.* **E** | **I · O** | 1771, for James Ogilvy, minister 1752 to 1802. Upright oblong, with serrated border, 12 × 14. Cochran-Patrick. Illustration 86.

EASTWOOD. *Obv.* **EAST** | **WOOD** | 1725, arranged to form three sides of a square. In centre, **M** | **RW**, with horizontal line below, for Mr Robert Wodrow, minister 1703 to 1734. Square, 10. Cochran-Patrick. Illustration 87.

EDDERTON. *Obv.* **E**. Edge bevelled. *Rev.* **K**. Square, 9. R.S.M. Illustration 88.

EDDERTON. A blank oblong, 13 × 11. Used when the tokens of 1792 ran short. N.M.A.

EDDLSTON (?). *Obv.* **ED**, incuse. Oblong, 10 × 9. N.M.A. Illustration 89.

EDINBURGH. *Obv.* City arms, with date 1731 below. *Rev.* **DG** in monogram, for Dean of Guild. Oblong, with borders, 11 × 12. C. of S. Illustration 90.

EDINBURGH. *Obv.* City arms, with date 1741 below. *Rev.* **TC** | **DG**, for Thomas Crokat, Dean of Guild, 1740-41. Oblong, with dotted borders, 11 × 12. Cox. Illustration 91.

EDNAM. *Obv.* **EDN** | **AM**. Square. Burns.

EDNAM. *Obv.* **EDN** | **EM** (Brook, 389). Burns gives two sizes of this. (Cp. Paul, p. 115.)

EDNAM. *Obv.* **ED** | **NEM** (N and E in monogram). *Rev.* **EDN** | **EM**. Square. Two sizes. Burns.

EDNAM. *Obv.* **EDN** | **EM**, with the four numerals of the date 1696 at each corner. *Rev.* **ED** | **NEM** (N and E in monogram). Square. Burns.

EDROM. *Obv.* **EDR** | **OM**, the E and D in monogram. *Rev.* **M** | **T · A** | 1710, for Mr Thomas Anderson, minister 1701 to 1712. Irregular square, 11. N.M.A. Illustration 92.

ELIE. *Obv.* **M** | **IC**, with double border, the inner one beaded, for Mr James Chalmers, minister 1701 to 1741. *Rev.* **ANNO** | 1712, with line and triangular group of beads above, and line of beads below, all within outer border. Square, 9. Cochran-Patrick. Illustration 93.

ELIE. *Obv.* **ELY** | **K**. *Rev.* 1755. Square, with serrated border on *obv.*, 12. Dundee. Illustration 94.

ERROL. *Obv.* **EK**, large capitals occupying the whole field. Oblong, with border, 10 × 8. R.S.M. Illustration 95.

ERROL. *Obv.* **EK**, in smaller capitals than the preceding, and in lower relief. Oblong, with border, 9 × 7. R.S.M. Illustration 96.

EVIE and RENDALL. *Obv.* **E**, incuse. *Rev.* **R**, incuse. Round, 12. Anderson, p. 48.

FAIR ISLE. Uninscribed blank. Square, 10. St A.

FALKLAND. *Obv.* **FALK** = | **LAND** | 1773. Oblong, with border, 13 × 10. C. of S. Illustration 97.

- FARR. *Obv.* **F**. Square, with border, 8. N.M.A. Illustration 98.
- FARR. *Obv.* **KF** | **1762**. Oblong, 9 × 10. N.M.A. Illustration 99.
- FARR. *Obv.* **KF** | **1767**. Square. Burns.
- FEARN. *Obv.* **F**. Square. Burns.
- FERN. *Obv.* **FERN** | **1787**, within circle. *Rev.* **I. COR.** | **XI. 28. 29**. Round, with borders, 16. Aberdeen. Illustration 100.
- FETLAR and NORTH YELL. *Obv.* **FR** in monogram. Upright oblong, with border, 9 × 13. St A. Illustration 102.
- FETTERCAIRN. *Obv.* **Fet K** | **1725**. *Rev.* **M^r** | **AD**, for Mr Anthony Dow, minister 1723 to 1772. Oblong. Burns.
- FIRTH and STENNESS. *Obv.* **F**. *Rev.* **I H**, for John Hendrie, minister 1654 to 1660. Round. Burns.
- FOGO. *Obv.* **FO** | **GO** | **17. 16**. Square, with border. Burns.
- FORFAR. *Obv.* **M** | **HM**, for Mr Hugh Maxwell, minister 1717 to 1744. *Rev.* **1727**. Round. Burns.
- FORFAR. *Obv.* **M** | **HM**, for Mr Hugh Maxwell, minister 1717 to 1744. *Rev.* **1736**. Round. Burns.
- FORFAR. *Obv.* **FOR** | **FAR** | **1782**. *Rev.* **M** | **IB** | **MIN^r** for Mr John Bruce, minister 1782 to 1817. Square, with border on rev., 12. C. of S. Illustration 101.
- FORGANDENNY. *Obv.* **F · P** | **17. 14**, with horizontal line between initials and date. Square, with serrated border, 12. R.S.M. Illustration 103.
- * FORGANDENNY. *Obv.* **FP** | **1727**, with horizontal line between initials and date. Square. Burns.
- FORT WILLIAM. *Obv.* **F**. Oblong, 9 × 8. Cox. Illustration 104.
- FORT WILLIAM. *Obv.* **T** (for token) | **FW**. Square, 12. R.S.M. Illustration 105.
- FRASERBURGH. *Obv.* **FRASER** | **BURG** | **1722**. *Rev.* **5** (table number), incuse. Oblong, with border, 16 × 11. C. of S. Illustration 106.
- GALSTON. *Obv.* **GALS** | **TOUN** | **1746**. Square, with border, 11. Cochran-Patrick. Illustration 107.
- GAMBIE. *Obv.* **G**. Octagonal. Burns.
- GAMBIE. *Obv.* **GAM:** | **ERY** | **1734**. Almost square, with border, 11. C. of S. Illustration 108.
- GARTLY. *Obv.* (as rev. of Brook 456) **M** | **RM** | **1761**, for Mr Roger Moodie, minister 1757 to 1766. *Rev.* blank. Oblong, with border, 12 × 13. R.S.M.
- GARVALD and BARA. *Obv.* **GK**. Oblong. Burns.
- GARVALD and BARA. *Obv.* **GA * P** | **1758**. Oblong, serrated border, 15 × 12. Perth. Illustration 109.
- GARVOCK. *Obv.* **K · G**. Octagonal, 13. R.S.M.
- GLADSMUIR. *Obv.* **GLK**, the **G** and **L** in monogram, within beaded inner border. Oblong, with border, 12 × 10. C. of S. Illustration 110.

GLAMIS. *Obv.* **G** | 1720. *Rev.* **M** | **WD**, for Mr William Dun, minister 1716 to 1725. Almost round, 11. Brown.

GLAMIS. *Obv.* **G**. *Rev.* 1748, with dot over 1, and S-scroll above and below date. Round, with border, 14. Perth. Illustration 112.

GLASGOW (Barony). *Obv.* **BARONY GLASGOW 1750**, on plain circular band; in centre, **M** | **LH**, with central dot, for Mr Laurence Hill, minister 1750 to 1773. Fiddle-shaped ornaments at corners. Square, with border, 10. Slimon. Illustration 111.

GLASSERTON. *Obv.* **GLAS** | 1705, with double horizontal line between letters and date. Square, with cut corners, and border, 10. N.M.A. Illustration 113.

GLASSFORD. *Obv.* **GK** | 1763. Square, with serrated border. Burns.

GLENBERVIE. *Obv.* **GLENBERVYS KIRK** around edge, the **RK** below the **KL**. The **S** is retrograde. Dot in centre. *Rev.* 17·59 within circle. Round, 14. R.S.M. Illustration 114.

GLENISLA. *Obv.* · **WA** | 1743, with dot below, the initials in monogram, for William Arthur, minister 1741 to 1757. Round, 14. Cochran-Patrick. Illustration 115.

GLENORCHY. *Obv.* **G**, incuse. Upright oblong, 7 × 8. C. of S. Illustration 116.

GOLSPIE. *Obv.* **G**, crude capital, incuse. Irregularly square, 8. Aberdeen. Illustration 117.

GOLSPIE. *Obv.* **G** | 16·4. Square. Burns.

GOVAN. *Obv.* **GOVAN**, and date (illegible) on plain circular band. In centre, **MR** | **WT**, for Mr William Thom, minister 1748 to 1790. Traces of dotted ornament in corners. Oblong, 11 × 10. Cochran-Patrick. Illustration 118.

GOVAN. *Obv.* **GOVAN PARISH · 1791 ·** on plain circular band; in centre, **MR** | **J.P.**, for Mr John Pollock, minister 1791 to 1820. Octagonal, with octagonal border, 12. R.S.M. Illustration 119.

GRANGE. As Brook 492, but on smaller flan. *Rev.* 2 (table number), incuse. Square, no border, 12. R.S.M.

GREENOCK. *Obv.* ∴ **GREENOCK** ∴ 1761 on plain circular band; in centre **N : P** (for New Parish), with three dots above and three dots below; ornament at each corner. Square, with serrated border, 12. R.S.M. Illustration 120.

GRETN. *Obv.* **GK**, incuse. Irregular oblong, 15 × 11. Cox. Illustration 121.

GRETN. *Obv.* **G**, incuse. *Rev.* **K**, incuse. Edge of *obv.* bevelled. Round, 13. Cox. Illustration 122.

GUTHRIE. *Obv.* **G**, crude capital, incuse. Irregularly heptagonal, 10. Aberdeen. Illustration 123.

HASSENDEAN. *Obv.* **HK**. *Rev.* **HK**. Square, with high borders, 10. Cox. Illustration 124.

HAWICK. *Obv.* **HK**, incuse. Edges of *obv.* bevelled. Square, 10. St A. Illustration 125.

HERIOT. *Obv.* **HK**, incuse. Round, 12. N.M.A. Illustration 126.

HERIOT. *Obv.* **HK**. Square. Burns.

HOBKIRK. *Obv.* **HK**, incuse. Almost square, 11. C. of S. Illustration 127.

HODDAM. *Obv.* **HK** | 1716. Square, with traces of border, 13. Perth. Illustration 128.

HOLYWOOD. *Obv.* **HW** | **K**, large thin **W** and large thick **H**, both touching border. Round, with border, 14. Whitelaw, No. 152, with illustration.

HOLYWOOD. As Brook 516, but with smaller **K**, and larger and ruder **HW**. Whitelaw, No. 156, with illustration.

HOLYWOOD. *Obv.* **H** . **W** | **K**; broader and larger **H**, broader **K** than Brook 517, **W** touching border to right. Round, with border, 14. Whitelaw, No. 154, with illustration.

HOUSTON and KILALLAN. *Obv.* **HK**^N, with ornament between **H** and **K**. Imperfect hexagon, 13. C. of S. Illustration 129.

HUMBIE. *Obv.* **HK**. Square, 8. At Humbie Parish Church.

HUTTON and FISHWICK. *Obv.* **H**, large irregular capital. Oblong, 8 × 10. N.M.A. Illustration 130.

HUTTON and FISHWICK. *Obv.* **H**, ends of letter running into border above and below. Irregular square, with broad border, 9. N.M.A. Illustration 131.

HUTTON and FISHWICK. *Obv.* **H**, small capital. Square, with edge arched at top and bottom, with border, 10. N.M.A. Illustration 132.

HUTTON and FISHWICK. *Obv.* **H**, within square inner border of dots; plain outer border. *Rev.* 1750, with border, which is serrated above the date. Square, 10. R.S.M. Illustration 133.

INCH. *Obv.* **INCH**, in rudely formed letters, the **N** retrograde. Oblong, 15 × 8. Cox. Illustration 134.

INCH. *Obv.* **INCH**, in oblong serrated panel, with serrated outer border at top and bottom. Oblong, with rounded ends, 17 × 8. C. of S. Illustration 135.

INCHINNAN. *Obv.* **INCENAN** + 1735, on plain circular band; in centre, radiated dot; ornaments at corners, outside band. Square, with dotted border, 12. C. of S. Illustration 136.

INNERLEITHEN (?). *Obv.* **I**, incuse. Oblong, 9 × 7. N.M.A. Illustration 137.

INNERLEITHEN (?). *Obv.* **IK**, small incuse capitals. Irregular oblong, 9 × 8. N.M.A. Illustration 138.

INNERLEITHEN (?). *Obv.* **IK**, small incuse capitals, smaller than on preceding token, the **K** slightly smaller than the **I**. Irregular oblong, 9 × 8. N.M.A. Illustration 139.

INNERWICK. *Obv.* **IW** | 1777. Upright oblong, 14 × 15. C. of S. Illustration 140.

INVERAVON. *Obv.* **I**, to left of field. Oblong, with border, 12 × 8. R.S.M. Illustration 141.

INVERESK. *Obv.* Monogram, in script letters, probably **MIWIK** | 1727, for Mr John Williamson, Inveresk Kirk, minister 1702 to 1740. Quite different from Brook 536. Oblong, 12 × 9. Perth. Illustration 142.

INVERKEILLOR. *Obv.* **M** | **WH** | **I**, for Mr William Hepburn, minister 1726 to 1756. *Rev.* 1729. Round. (As Brook, p. 513 (63), but with *rev.*) Burns.

INVERKEITHNY. *Obv.* **M** | **AH**, for Mr Alexander Hay, minister 1608 to 1614. Square. Burns.

INVERNESS. *Obv.* **INS**, incuse. *Rev.* **C** | **CE**, incuse, for Communion, Chapel of Ease. Round, with border, 13. N.M.A. Illustration 143.

IONA. *Obv.* **I**, large capital with knop at centre. Oblong, traces of broad border, 9 × 10. R.S.M. Illustration 144.

IRVINE. *Obv.* **IRVIN** | 1721. Oblong, with border, 13 × 12. R.S.M. Illustration 145.

JEDBURGH. *Obv.* **M** | **WI** | **J**, for Mr William Jameson, minister 1640 to 1661. *Rev.* Two communion cups, with knopped stems and circular feet; two dots between. Round, with serrated borders, 15. Perth. Illustration 146.

JOHNSTONE (Dumfries). *Obv.* **IK**, the **I** with central knop. Square, with border, 11. Dundee. Illustration 147.

KEIR. *Obv.* **KK** | 1747. Square, with border, 10. Whitelaw, No. 163, with illustration.

KEIR. As Brook 552, but with "distinct letters and figures." Square, 11. Whitelaw, No. 164, note.

KELSO (?). *Obv.* **K**. Oblong, with border, no measurements given. Paul, p. 129, with illustration.

KELTON. *Obv.* **K** | **N**° 3. The numeral (table number) is in relief in a sunk rectangle, made by a punch. Square, with cut corners and double border, 11. R.S.M. Illustration 148.

KETTINS. *Obv.* **M** | **IG**, in circle, for Mr James Gray, minister 1717 to 1743. Irregularly heptagonal, 12. St A. Illustration 149.

KILBARCHAN. *Obv.* **KILBARCHAN 1783**, on plain circular band; in centre, in script capitals, **JW**, for John Warner, minister 1739 to 1786. Octagonal, 16. R.S.M. Illustration 150.

KILBIRNIE. As Brook 570, but the date 1769 on *rev.* is in quite different numerals, which are all of the same height; there is no dot in the centre of the 6, and there are no ornamental tails to the 6 and 9. Round, with serrated border, 14. R.S.M. Illustration 151.

KILCALMONELL and KILBERRY. *Obv.* **K**. Oblong, with border, 9 × 11. R.S.M. Illustration 152.

KILCHRENAN. *Obv.* **M** | **WC**, with horizontal line between, for Mr William Campbell, minister 1745 to 1793. Oblong, with border, 13 × 10. C. of S. Illustration 153.

KILCONQUHAR. *Obv.* **KIL** | **CON** | **QVH** | **AIR**. *Rev.* **KIRK** | 1705. Square, with double borders, 10. Cochran-Patrick. Illustration 154.

KILDRUMMY or LOGIE-COLDSTONE. *Obv.* **M** | **I** × **M** | 1768, either for Mr James McWilliam, minister at Kildrummy 1763 to 1771, or for Mr John McInnes, minister at Logie-Coldstone 1748 to 1777. Square, with serrated border, 14. C. of S., and Slimon. Illustration 155.

KILKENZIE. *Obv.* **K**, antique capital. Oblong, 11 × 10. Aberdeen. Illustration 156.

KILMANY. *Obv.* **K** | 1707. *Rev.* **M** | **WB**, for Mr William Brown, minister 1703 to 1720. Round, 11. C. of S. Illustration 157.

KILMARNOCK. *Obv.* **KILM** · **K** · **CHAPEL**, on plain circular band; in centre, 1764; three dots at each corner. Square, with border, 13. R.S.M. Illustration 158.

KILMARONOCK. *Obv.* **KMK** | 1756, with horizontal line between initials and date; **MK** in monogram. Oblong, with border, 11 × 12. Cox. Illustration 159.

KILMARTIN. *Obv.* **KILMARTIN** on circular band; in centre **M** | **AL**, for Mr Archibald Lambie, minister 1738 to 1767. Square. Burns.

KILNINIAN and KILMORE. *Obv.* **M** (for Mull) in sunk panel. Oblong, with border 10 × 9. St A. Illustration 160.

KILPATRICK, NEW. *Obv.* **N** · **K** | 1 · 7 · 9, the **N** retrograde. Upright oblong, with dotted border, 11 × 12. C. of S. Illustration 161.

KILPATRICK, NEW or EASTER. *Obv.* **E · K · P · 1746** on plain circular band; in centre, **M | A · G**, for Mr Andrew Gray, minister 1731 to 1776. Corners filled in with rays. Square, 13. St A. Illustration 162.

KILSPINDIE. *Obv.* **M | IH | K**, for Mr John Hall, minister 1646 to 1656. Upright oblong, with beaded border. Burns.

KILSPINDIE. *Obv.* **M | RC | 17 K 30**, for Mr Robert Coventry, minister 1727 to 1761. Irregularly round, 12. Description and illustration from a rubbing. Cox. Illustration 163.

KILTEARN. *Obv.* **K**. Square, with border, 7. Anderson, p. 34, with illustration.

KINCARDINE O'NEIL. *Obv.* **K**, with vertical bar, and hieroglyphical figure to the right. Square, with border, 10. Anderson, p. 6.

KINCARDINE O'NEIL. *Obv.* **Kin | N**. Oblong, 9 × 12. Anderson, p. 6.

KINCLAVEN. *Obv.* **KIN | CLA | VEN** on raised square. *Rev.* Representation of Church. Round, 12. R.S.M. Illustration 164.

KINGLASSIE. *Obv.* **KK | 1729**. *Rev.* **M | IC**, for Mr John Currie, minister 1705 to 1765. Square, 11. C. of S. Illustration 165.

KINLOSS. *Obv.* **K**, quite different from Brook 636, and the lower limb of the capital not recurved. Square, with border, 11. R.S.M. Illustration 166.

KINNEFF. *Obv.* **K**. Square. Burns.

KINNEFF. *Obv.* **KIN : | NEF. | ***. Square, with border, 12. Dundee. Illustration 167.

KIRKCALDY (Abbotshall). *Obv.* **AK | 1735**. *Rev.* **M | TN**, for Mr Thomas Nairne, minister 1710 to 1740. Irregular square, with borders. Measurements not recorded. Whitelaw, illustration, p. 59 (p. 32 of offprint).

KIRKCALDY (Abbotshall). *Obv.* **AK | 1743**. *Rev.* **M | GG**, for Mr George Gibb, minister 1742 to 1756. Oblong. Burns.

KIRKCOLM. *Obv.* **K**, incuse. Oblong, with rounded corners, 12 × 11. Cox. Illustration 168.

KIRKCOLM. *Obv.* **KIRKH | OLM. | 1766**. Oblong, with border, 14 × 11. R.S.M. Illustration 169.

KIRKMAHOE. *Obv.* **KHO | 1719**, with communion cup above. Round. Burns.

KIRKMAHOE. *Obv.* **KHO | 1723**, with communion cup above. Irregular round with border, 13. St A. Illustration 170.

KIRKMICHAEL (Ayr). *Obv.* **K * M | 1730**. Oblong, with border, 9 × 10. Perth. Illustration 171.

KIRKMICHAEL (Dunkeld). Blank. Square, 10. St A.

KIRKNEWTON. *Obv.* **KN**, edge bevelled. *Rev.* **1734**. Square, 11. C. of S. Illustration 172.

KNOCKANDO (formerly Macallan). *Obv.* **Ṁ**. Almost square, with border, 9. R.S.M. Illustration 173.

KNOCKANDO (formerly Macallan). *Obv.* **Ṁ**, narrower letter than on preceding token. Upright oblong, with traces of border, 8 × 9. R.S.M. Illustration 174.

LAIRG. *Obv.* **L**, without the serifs shown in Brook 700. Oblong, 9 × 8. R.S.M.

LAMINGTON and WANDEL. *Obv.* **LW**, incuse capitals. Irregularly square, 10. Slimon. Illustration 175.

LAMINGTON and WANDEL. *Obv.* **L**, incuse; **W** in sunk panel. Oblong, 10 × 8. Perth. Illustration 176.

LANGHOLM. *Obv.* **LK** in sunk serrated circle. Irregular square, 12. Perth. Illustration 177.

LANGTON. *Obv.* **L**, small capital, incuse. Silver, round, 15. A "Superior's" token. Cox. Illustration 178.

LARBERT and DUNIPACE. *Obv.* **L * D** | 1723. Oblong, with double border, 11 × 9. N.M.A. Illustration 179.

LARBERT and DUNIPACE. *Obv.* **L + D** | 1749. Square, with border, 11. R.S.M. Illustration 180.

LARGS. *Obv.* **LARGS** | 1726, with horizontal line between name and date. Square, with beaded inner and continuous outer border, 12. Kilmarnock. Illustration 181.

LASSWADE. *Obv.* **LK** | 1705. Square, with border, 11. C. of S. Illustration 182.

LECROFT. *Obv.* **LP · K** | 1700, with horizontal line between letters and date. Oblong, with border, 10 × 9. R.S.M. Illustration 183.

LECROFT. *Obv.* **LP · K** | 1740, the 4 of the date reversed. Oblong. Burns.

LEITH, NORTH. *Obv.* **NK** | * **L** *. *Rev.* 1731, with star above and below. Round, 15. Brown. Illustration 184.

LEITH, NORTH. *Obv.* **LEITH** | 1776. *Rev.* **N.K.** | **COM^N**, for North Kirk Communion. Oblong, 13 × 10. N.M.A. Illustration 185.

LEITH, SOUTH. *Obv.* **SLK** | 94 (for 1694). Round, 13. Perth. Illustration 186.

LINLITHGOW. *Obv.* **LL**. *Rev.* 1702. Almost round, 13. Aberdeen. Illustration 187.

LINTRATHEN. *Obv.* **M** | **LB** | **L** | 1720 within circular panel, serrated inwards, for Mr Laurence Brown, minister 1717 to 1770. Almost square, 10. Cox. Illustration 188.

LINTRATHEN. *Obv.* **LIN** | 1792. Square, with serrated border, 8. Cox. Illustration 189.

LOCHALSH. *Obv.* **L**. Round, 13. Anderson, p. 40.

LOCHALSH. *Obv.* **LH**. Round, with border, and bevelled edge, 12. Dundee. Illustration 190.

LOCHCARRON. *Obv.* **LOCH** | **CARRON** | 1788, incuse. Round, 15. C. of S. Illustration 191.

LOCHGOILHEAD. *Obv.* **L GK** | 1701. Oblong, with border, 11 × 10. C. of S. Illustration 192.

LOCHGOILHEAD. *Obv.* Similar to Brook 744, but the date 1775 is in italic numerals. Square, 13. R.S.M. Illustration 193.

LOCHLEE. *Obv.* **LOCH** | **LEE**, with horizontal line between. Square, with serrated border, 13. Dundee. Illustration 194.

LOCHMABEN. *Obv.* **LOCHMABEN** and ornament around edge; in centre, 1776; all incuse. Round, 14. Whitelaw, No. 194, with illustration.

LOCHS. *Obv.* **L**. Oblong, 11 × 12. Anderson, p. 43.

LOCHWINNOCH. *Obv.* **LOCH** 1762 on plain circular band; dot in centre of token. Square, 12. Cox. Illustration 195.

LOCHWINNOCH. *Obv.* **LOCHWINNOCH 1789** on plain circular band; in centre, **M^R | IS**, for Mr James Steven, minister 1788 to 1801; ornaments at corners. Square, with border, 13. C. of S. Illustration 196.

LOGIE (Dunblane). *Obv.* **L · K | 1725**. Square, 9. Aberdeen. Illustration 197.

LOGIE-COLDSTONE. See KILDRUMMY.

LOGIE EASTER. *Obv.* **L**, incuse. Irregular oblong, 12 × 14. N.M.A. Illustration 198.

LOGIEPERT. *Obv.* **LP** in monogram. Round, 10. Dundee. Illustration 199.

LONGFORMACUS. *Obv.* **LK**, incuse. *Rev.* **LK**, incuse. Oblong, 12 × 9. Brown. Illustration 200.

LONGSIDE. *Obv.* **LS**, in square sunk panel. Copper, irregular square, 10. Perth. Illustration 201.

LOTH. *Obv.* **KL**, the limbs of the **K** running into the upright of the **L**, and the tops of the letters running into the border. Very rude casting. Oblong, with border, 11 × 10. R.S.M. Illustration 202.

LOTH. *Obv.* **KL**, tall thin capitals, rudely formed, touching the border above and below. Oblong, with border, 8 × 9. R.S.M. Illustration 203.

LOTH. *Obv.* **KL**, well-formed capitals running to extreme edge above and below. Oblong, 11 × 8. R.S.M. Illustration 204.

LUCE, OLD. *Obv.* **OLD : | LWCE**, with horizontal line between. Oblong, with border, 15 × 10. C. of S. Illustration 205.

LUNDIE and FOWLIS. *Obv.* **L · F**. Oblong, with border, 9 × 10. St A. Illustration 206.

LUSS. *Obv.* **LUSS | -KS**. Square, with border, 10. Cochran-Patrick. Illustration 207.

MADDERTY. *Obv.* **MA | DER | TIE**. Irregular square, with double border, 11. C. of S. Illustration 208.

MADDERTY. *Obv.* **MADE | RTIE**. Oblong, with border, 10 × 9. C. of S. Illustration 209.

MANOR. *Obv.* **MK**, incised, in monogram. Oblong, 9 × 8. At Manor Church.

MANOR. *Obv.* **MK**, incised capitals with serifs. Square, corners slightly rounded, 10. R.S.M.

* MANOR. *Obv.* **MK**, letters scratched on freehand. Oblong. Of ten specimens at Manor Church no two are quite alike. There are differences in the size of the initials, and of the tokens, the latter varying from 10 × 7 to 8 × 6.

MARYTON. *Obv.* : **MARITOUN** · around edge, ornaments composed of dots filling in the space between **N** and **M**; in centre, within double inner circle, a floral ornament. *Rev.* At top, **M**; rest of inscription obliterated. (Burns shows the date 1715 on *rev.*, below **M**.) Round, 14. R.S.M. Illustration 210.

MAUCHLINE. *Obv.* **MC | 7 K00** (for 1700). Oblong, with border, 10 × 8. Cochran-Patrick. Illustration 211.

MAXTON. *Obv.* **MK**, tall capitals, in monogram, with border. *Rev.* blank, with border. Oblong, 12 × 11. Brown. Illustration 212.

MAXTON. *Obv.* **MK**, tall capitals, in monogram, ends of letters reaching edge of token; no border. Square, 10. Brown. Illustration 213.

MAXTON. *Obv.* Monogram, probably intended for **MAX K**. Round, with border, 11. Brown. Illustration 214.

MAYBOLE. *Obv.* **MAY** | **BOL**. Square, 10. C. of S. Illustration 215.

MELROSE. Similar to Brook 796, but the mell has a plain cylindrical head and haft, and the rose is differently shaped. Oblong, with double border, not dotted, 11 x 10. R.S.M. Illustration 216.

MIDMAR. *Obv.* **KM** | 1776, with three dots between initials and date. *Rev.* blank. Square, with border, 13. (As Brook 807, but with blank rev.) St A.

MOFFAT. *Obv.* **MK**, incuse. Oblong, 11 x 8. Slimon. Illustration 217.

MONEYDIE. *Obv.* **MK** | 1706. Oblong. Burns.

MONIFIETH. *Obv.* **MONEFITH** with ornamental knot around edge. *Rev.* **M** · | **I * H** | 1779, for Mr James Henderson, minister 1763 to 1787. Round, with dotted border both sides, 15. Aberdeen. Illustration 218.

MONIKIE. *Obv.* **MONIKE** | 1740, irregular letters and figures, the **N** retrograde; border of large dots. *Rev.* **M** | **GI**, for Mr George Johnstone, minister 1738 to 1773. Round, 16. C. of S. Illustration 220.

MONIKIE. *Obv.* **MONIKIE**, in semi-circle around upper edge, with dots completing the circle below; in centre, dot; below, horizontally, 1787. *Rev.* **M^R** | **WM**, for Mr William Maule, minister 1783 to 1827. Round, with borders, 13. C. of S. Illustration 221.

MONKLAND, NEW. *Obv.* **NEW . MUNKLAND . 1755**, on plain circular band; in centre **M^R** | **I · C**, for Mr John Currie, minister 1733 to 1758; ornament at each corner. Square, with border, 11. R.S.M. Illustration 219.

MONQUHITTER. *Obv.* **M^{er}** | 1779. Oblong, with border, 17 x 15. Aberdeen. Illustration 222.

MONYMUSK. *Obv.* **M** | **AD**, for Mr Alexander Duff, minister 1781 to 1814. *Rev.* blank. Upright oblong, 11 x 13. Anderson, p. 10.

MORTON. *Obv.* **M**. Oblong, with border, 9 x 8. Whitelaw, No. 214, with illustration.

MORTON. *Obv.* **MK** in monogram. Oblong, 11 x 9. Whitelaw, No. 215, with illustration.

MORVEN. *Obv.* **MOR** in relief, within oblong sunk panel. Diamond, sides 16. R.S.M. Illustration 223.

MOULIN. *Obv.* **M** | **I : S** | 1710 | **M**, in sunk oval panel, for Mr James Stewart, minister 1707 to 1735. Upright oblong. Burns.

MOUSWALD. *Obv.* **MK**, incuse. Oblong, 12 x 11. Whitelaw, No. 219.

MOUSWALD. *Obv.* **M**, rude capital. *Rev.* Similar. Round, 17. Cochran-Patrick. Illustration 224.

MOY. *Obv.* **M** within rectangle of dots. Copper, oblong, with border, 9 x 7. R.S.M. Illustration 225.

MURROES. *Obv.* **MUR** | **ROIS** | 1744. *Rev.* **M** | **GM**, for Mr George Marr, minister 1741 to 1760. Round, with border on *obv.*, 13. Cochran-Patrick. Illustration 226.

MUTHIL. *Obv.* **MVT** | **HIL**. *Rev.* 1709. Square. Burns.

MUTHIL. *Obv.* **MVT** | **HIL**. *Rev.* 17 | 09. Square. Burns.

NESTING. *Obv.* **N**, incuse. *Rev.* 2 (table number), incuse. Almost square, 10. Cox. Illustration 228.

NEWBURGH. *Obv.* **N : C** (this letter probably intended to represent a lower-case b) | 1705, the **N** retrograde. Oblong, with border, 12 x 10. C. of S. Illustration 229.

NEWBURN. *Obv.* **NBK** | 1770, the **B** raised above the level of the other letters. *Rev.* **M** | **RJ**, for Mr Richardson, minister 1769 to 1778. Square, 9. Glasgow. Illustration 227.

NEW MACHAR. *Obv.* **N · M** between two horizontal lines, with one dot above, and **7 · 1** (for 1671) below. Round, 11. St A. Illustration 230.

NEW MACHAR. *Obv.* **NM**, with dot below each letter, between two horizontal lines. Round, with traces of border, 11. R.S.M. Illustration 231.

NEWTYLE. *Obv.* **M | GC | N**, for Mr George Clephane, minister 1698 to 1730. Round. Burns.

NIGG. *Obv.* **KN | 1769**. Square, with border, 13. Perth. Illustration 232.

NORTHMAVINE. *Obv.* **N | MAVINE**. Round, 13. Cox. Illustration 233.

OCHILTREE. *Obv.* **O · K | 1787**, incuse. Square, with incuse border, serrated outwards, 14. Cox. Illustration 234.

ORDIQUHILL. As Brook 882, but with double border. Oblong, 16 × 10. R.S.M.

ORDIQUHILL. *Obv.* **M | AG**, for Mr Alexander Gray, minister 1794 to 1823. Square, with serrated border, 11. Cox. Illustration 235.

ORWELL. *Obv.* **KO**. *Rev.* 1735. Round. Burns.

PAISLEY (Abbey). *Obv.* **PAISLEY · 1714 *** around edge; in centre **M | R · M**, for Mr Robert Millar, minister 1709 to 1752. Octagonal, 13. Dunblane. Illustration 236.

PAISLEY (Abbey). As Brook 895, but the oval panel is lined horizontally; 7 (table number) incuse, at top left corner. Oblong, 13 × 10. R.S.M.

PAISLEY (Abbey). *Obv.* **ABBEY, | PAISLEY. | 1798.**, surrounded by an ornamental wreath, but not within an oval panel; inner border of dots, with leafy ornaments at corners; 1 (table number) incuse, at top left corner. Oblong, with border, 13 × 10. R.S.M.

PARTON. *Obv.* **P.K.** Oblong, with border, 15 × 13. C. of S. Illustration 237.

PENNINGHAME. *Obv.* Six-leaved rosette, incuse. Tin, oblong with cut corners, 20 × 19. Aberdeen. Illustration 238.

PENNINGHAME. As foregoing token, but 39 × 21. Cox.

PERTH. *Obv.* **KP | 1699**. Square, with ornamental border, 13. Perth. Illustration 239.

PERTH. As Brook 907, but the thick line of the scroll running down towards the left bottom corner is doubled. Lamb.

PETTY. *Obv.* **PETTY**. Oblong, cut corners, 16 × 12. N.M.A. Illustration 240.

PITSLIGO. *Obv.* **T | P · K**. Square, with ornamental border, 11. Cochran-Patrick. Illustration 241.

PITTENWEEM. *Obv.* **P · V** in circle. Oblong, 12 × 14. Dundee. Illustration 242.

PITTENWEEM. *Obv.* **PITEN | WEEM** in irregular capitals, the **N** inserted above the preceding **E**. *Rev.* **M | DB | 1759**, for Mr David Beath, minister 1741 to 1775, with representation of communion cup in centre. Square, with borders, 10. C. of S. Illustration 243.

POLMONT. *Obv.* **P**. *Rev.* 1735. Round. Burns.

PORT-GLASGOW. As the first of the two Port-Glasgow tokens described by Brook, but with 17761 in error for the date 1761. St A.

PORT-GLASGOW. *Obv.* In centre, three-masted ship sailing to left; below, **PT G**; all within a circle; wide border of radiating dashes. *Rev.* **JL**, in script capitals; 1201, incuse. Round, 17. R.S.M. Illustration 244.

PORT-GLASGOW. *Obv.* Three-masted ship sailing to left; below, **PT G**; all within a circle; serrated border. *Rev.* 147, incuse. Square, 13. R.S.M. Illustration 245.

PORTPATRICK. *Obv.* **S**, incuse. Oblong, 11 × 8. (Similar to Brook 920, but without initials or date.) Aberdeen.

PORTREE. *Obv.* **P**, incuse. Tin, square, with cut corners, 15. Aberdeen. Illustration 246.

PORTSOY. *Obv.* **IO** | **M**, incuse, for James Ogilvie, minister 1747 to 1750. Brass, round, 12. St A. Illustration 247.

PREMNAY. *Obv.* **LEITH** | 1739 (Patron's name). Oblong. Burns.

PRESTONKIRK. *Obv.* **PHK** (for Prestonhaugh Kirk), the **H** and **K** in monogram. *Rev.* 1707. Almost square, 10. C. of S. Illustration 248.

PRESTONKIRK. *Obv.* **PK**. Heart-shaped, with border, 12 × 10. R.S.M. Illustration 249.

RAFFORD. *Obv.* **RAF** | 1722. Square, with border, 10. C. of S. Illustration 250.

RATHVEN. *Obv.* **D** (for Deskford) within square frame; serrated border. (Brook 290.) *Rev.* **M** | **AK** | **R**, for Mr Andrew Ker, minister 1723 to 1751 (Brook 935). Square, 11. Anderson, p. 21, with explanatory note.

RAYNE. *Obv.* **RAINE**, the **N** retrograde. Octagonal, 14. Cochran-Patrick. Illustration 251.

REAY. *Obv.* **R** : **K**, with a dot at each corner. Square. Burns.

RESCOBIE. *Obv.* **RESCO** | **BIE** · | **KIR** | **K** arranged round edge to form square; in centre, **LT** (probably for Lord's Table). *Rev.* **M** | **ID**, for either Mr John Dougal *primus*, minister 1704 to 1723, or Mr John Dougal *secundus*, 1725 to 1748. Square, with border on *rev.*, 11. C. of S. Illustration 252.

RESOLIS. *Obv.* **R**. Round. Burns.

ROBERTON. *Obv.* **KR**. Square. Burns.

ROGART. *Obv.* **R**, retrograde. Upright oblong, with rounded corners, 7 × 9. Glasgow. Illustration 253.

ROGART. *Obv.* **RK**. Square. Burns.

ROSEMARKIE. As the token of 1786 described by Brook, but without the **S** above the date on *rev.* R.S.M.

ROSNEATH. *Obv.* **ROS** : | 1700. Square, with border, 14. Perth. Illustration 254.

ROXBURGH. *Obv.* **R** · **O**. Oblong, with border, 12 × 8. Cox. Illustration 255.

ROXBURGH. *Obv.* **RB**, incuse. Oblong, 12 × 9. Cox. Illustration 256.

RUTHERGLEN. *Obv.* **REUTHERGLEN** 1745 on plain circular band; in centre, **M** | **WM**, for Mr William Maxwell, minister 1742 to 1780. Rosettes and stars at corners. Square, 11. St A. Illustration 257.

RUTHWELL. *Obv.* **R**. Square, with broad border, 10. C. of S. Illustration 258.

ST MARTINS. *Obv.* **SM** | · 99 · with horizontal line between letters and figures. Date probably 1699. Square, 12. Cox. Illustration 259.

ST MARTINS. *Obv.* **SM** | 1729, with horizontal line between letters and date. Square, with double border, 13. Perth. Illustration 260.

ST MARTINS. *Obv.* **SM** | 1777, with horizontal line between initials and date. Oblong. Burns.

ST MARTINS. *Obv.* **SM** | 1784 (the **S** and the **4** reversed), with horizontal line between initials and date. Irregular square, 12. St A. Illustration 261.

ST NINIAN. *Obv.* **S^T NK** | 1730, the **T** above the space between **S** and **N**, the **N** and **K** in monogram. Square, 9. C. of S. Illustration 262.

SANDSTING and AITHSTING. *Obv.* **ASK** | 1747. *Rev.* **M** | **WH**, for Mr Walter Hugens, minister 1733 to 1769. Oblong, 10 × 8. St A. Illustration 263.

SANQUHAR. *Obv.* **Sq.** Square, with thick border, 10. Whitelaw, No. 236, with illustration.

SCOONIE. *Obv.* **SK** | 1720. *Rev.* **M** | **TM**, for Mr Thomas Melville, minister 1718 to 1763. Square, with borders, 12. C. of S. Illustration 264.

SHOTTS. *Obv.* **SK.** Square, with border, 10. Brown. Illustration 265.

SKENE. *Obv.* **M** | **R · D** within circle, for Mr Robert Dunbar, minister from 1622 to an undetermined date. Irregularly square, 9. Cochran-Patrick. Illustration 266.

SLAMANNAN. *Obv.* **S**, retrograde. Round, with border, 10. Brown. Illustration 267.

SLAMANNAN. As Brook 1011, but the letters **SL** are smaller, and the horizontal limb of the **L** runs into the border. Square, 7. R.S.M. Illustration 268.

SLAMANNAN. *Obv.* **S · L ·**, the **S** with fish-tailed ends. Square, with border, 7. R.S.M. Illustration 269.

SLAMANNAN. *Obv.* **· SL ·**, the **S** with fish-tailed ends. Almost square, with border, 7. R.S.M. Illustration 270.

SLEAT. *Obv.* **S**, incuse. Oblong, 12 × 9. C. of S. Illustration 271.

SMAILHOLM. *Obv.* **SMAL** | **HOM**, **M** and **A** in monogram. Oblong, 12 × 10. C. of S. Illustration 272.

SOUTHEND. *Obv.* **S * P** | 1726. Oblong, with border, 11 × 10. Dundee. Illustration 273.

SPOTT. *Obv.* **SPK**, the last two letters in monogram. Square, with border. Burns.

SPOTT. *Obv.* **· SPK ·**, the last two letters in monogram. Square, with border. Burns.

SPOUSTON. *Obv.* **K** | **SP**. Square, with border, 12. St A. Illustration 274.

SPOUSTON. *Obv.* **SPROV** | **STOVN** | **· K ·**. Round, with border, 12. Cochran-Patrick. Illustration 275.

SPYNIE. *Obv.* **SP**, with ornaments between, in sunk oval; the letters are large but light block capitals. Oblong, 8 × 10½. Anderson, p. 27.

SPYNIE. *Obv.* **SPYNIE**, arranged in a small circle, with dot in centre; **N** retrograde. Round, 12. Anderson, p. 27, with illustration.

STAIR. *Obv.* **SK** | 1692. Oblong, with border, 10 × 9. St A. Illustration 276.

STENTON. *Obv.* **STK** | 1707, the last two letters in monogram; horizontal line between initials and date. Square. Burns.

STIRLING. *Obv.* **S**. *Rev.* **S**. Square. Burns.

STONEHOUSE. *Obv.* **SK** | 1767. Oblong, with border, 11 × 10. R.S.M. Illustration 277.

STOW. *Obv.* **S**. Oblong. Burns.

STOW. *Obv.* **SK**. *Rev.* **S**. Oblong. Burns.

STRATHY. *Obv.* **S**, incuse. Square, 12. Cox. Illustration 278.

STRICHEN. *Obv.* **Stri** along the top, **hen** along the left side; **5** (table number) in centre. *Rev.* 1768, inverted, at top; **MI** along right side and with large and small **S** in centre, for Mr John Smith, minister 1748 to 1784. Square, 12. Anderson, p. 21.

SWINTON and SIMPRIN. *Obv.* **SS** | **67**. Thin iron, square with cut corners, 14. Cox. Illustration 279.

TARBAT. *Obv.* **T**. Edges bevelled. Square, 10. Glasgow. Illustration 280.

TARBOLTON. *Obv.* **T · B** | **1765**, within rectangular frame; all in sunk panel, with serrated borders. Oblong, 13 × 11. R.S.M. Illustration 281.

TEALING. *Obv.* **M** | **IG** | **T**, for Mr John Glas, minister 1719 to 1730. Round, with traces of border, 11. R.S.M. Illustration 282.

TERREGLES. *Obv.* **TK** in monogram. Square, with serrated border, 9. Cox. Illustration 283.

TINGWALL. *Obv.* **M** | **WM** | **1777**, for Mr William Mitchell, minister 1749 to 1792. Oblong, with rounded corners, 10 × 11. Dundee. Illustration 284.

TINWALD and TRAILFLAT. *Obv.* **TN**. *Rev.* **MAR**, in script letters, in monogram for Mr Alexander Robesone, minister 1697 to 1761. Round, 10. Cochran-Patrick. Illustration 285.

TINWALD and TRAILFLAT. *Obv.* **T & T** | **1787**. Square, cut corners, 11. Whitelaw, No. 246, with illustration.

TINWALD and TRAILFLAT. *Obv.* **T & T** | **1787**. *Rev.* Plain, with incuse numeral. Square, cut corners, with border on *obv.*, 13. Whitelaw, No. 247, with illustration.

TONGUE (?). *Obv.* **T**, incuse. Square, 10. N.M.A. Illustration 286.

TONGUE (?). *Obv.* **T**, incuse. Oblong, 8 × 9. N.M.A. Illustration 287.

TOROSAY. *Obv.* **T**, incuse. Oval, 15 × 12. Cox. Illustration 288.

TORTHORWALD. *Obv.* **TK** in monogram, with solid segment below. Variety of Brook 1092, which has a line below the monogram. Round, with border, 11. St A. (Whitelaw, No. 249, with illustration.)

TRINITY GASK. *Obv.* **TG** | **1731**. Almost square, with ornamental border, 11. C. of S. Illustration 289.

TYNEN. *Obv.* **TK** | **1771**, Lombardic letters and figures. Square, with serrated border, 9. Cochran-Patrick. Illustration 290.

TYRIE. *Obv.* **T**. Square. Burns.

UDNY. *Obv.* **VDNY** | **93** (for 1693) with horizontal line above and below name, and a five-pointed star above upper line. Round, with border, 12. C. of S. Illustration 291.

URQUHART and GLENMORISTON. *Obv.* **URQVHART** in Latin capitals round edge, with central dot. *Rev.* **17** | **I · G** | **45**, for Mr John Grant, minister 1741 to 1792. Round. (Described from drawing made by the late Mr David Murray.)

URR. *Obv.* **URR** | **1760**, with dot in centre of token; serrated border. *Rev.* In centre, two concentric circles; double border. Round, 13. R.S.M. Illustration 292.

WEMYSS. *Obv.* **WK**, with border, and ornaments at corners. *Rev.* **17** | **12**, with double border. Square, 12. C. of S. Illustration 293.

WEMYSS. *Obv.* **W · K** | **1725**. *Rev.* **M** | **I · C**, for Mr John Cleghorn, minister 1711 to 1744. Square, with borders, 13. C. of S. Illustration 294.

WEMYSS. *Obv.* **WEM** | **YSS**. *Rev.* **M** | **GG**, for Mr George Gib, minister 1785 to 1818. Round, with beaded borders, 15. Kilmarnock. Illustration 295.

WEST CALDER. *Obv.* **WC**, with dot above and below. Oblong, with border, 11 × 8. Slimon. Illustration 296.

WESTRAY. *Obv.* **W**. Square. Burns.

WHITEKIRK and TYNINGHAME. *Obv.* **W.K.**, rude capitals, with horizontal line above and below. Oblong, with border, 10 × 9. R.S.M. Illustration 297.

WHITHORN. *Obv.* **WHIT** | **1707**, with horizontal line between letters and date. Irregular square, with rounded corners, 12. St A. Illustration 298.

WHITTINGHAME. *Obv.* **W.K.**, each of the extremities of the initials terminating in a bead. Oblong, with rounded corners and double border, 13 × 10. R.S.M. Illustration 299.

WICK. *Obv.* **KIRK** | **WICK**. *Rev.* **1719**. Round, 14. Anderson, p. 39.

WILTON. *Obv.* **KWK** (in monogram) | **170**- (the last figure of the date uncertain, but probably either 4 or 5). Oblong, with cut corners, 15 × 14. C. of S. Illustration 300.

UNIDENTIFIED. *Obv.* **M**: | **W.S.** | **1707** | **B**: in sunk panel, which is roughly circular. Upright oblong, 11 × 12. Cochran-Patrick. Illustration 301.

UNIDENTIFIED. *Obv.* **KB**, with cross between the letters. Oblong, with broad serrated border, 12 × 10. Cochran-Patrick. Illustration 302.

UNIDENTIFIED. *Obv.* **KC**. Heart-shaped, 12 × 12. Cochran-Patrick. Illustration 303.

UNIDENTIFIED. *Obv.* **M** | **IF** | **D** | **1730**, in square sunk serrated panel. Square, 12. Cochran-Patrick. Illustration 304.

UNIDENTIFIED. *Obv.* **LM** in monogram. Square, with border, 9. Cochran-Patrick. Illustration 305.

UNIDENTIFIED. *Obv.* **MK**, incuse. Square, 10. Cochran-Patrick. Illustration 306.

UNIDENTIFIED. *Obv.* **ML** in monogram. Square, with ornamental border, 15. N.M.A. Illustration 307.

UNIDENTIFIED. *Obv.* **PG**, with two dots below. Oblong, with border, 10 × 9. Cochran-Patrick. Illustration 308.

UNIDENTIFIED. *Obv.* **R**. *Rev.* An oblong panel divided by a horizontal line, with **1798** in the upper part and two *fleurs-de-lys* in the lower. Plain border on *obv.*, ornamental border on *rev.* Oblong, with rounded corners, 12 × 11. The similarity to Botriphny, 1782 (Brook 127) will be noted. Cochran-Patrick. Illustration 309.

UNIDENTIFIED. *Obv.* **RC** | **1700**. Square, with border, 10. Cochran-Patrick. Illustration 310.

UNIDENTIFIED. *Obv.* **STF**. Square, with border, 10. Cochran-Patrick. Illustration 311.

UNIDENTIFIED. *Obv.* **W**. Oblong, 8 × 6. Cochran-Patrick. Illustration 312.

UNIDENTIFIED. *Obv.* **W.K.** Square, with border, 11. Slimon. Illustration 313.

UNIDENTIFIED. *Obv.* **FD** in monogram. Irregularly round, with border, 11. Doubtfully ascribed to Dunscore. Glasgow. Illustration 314.

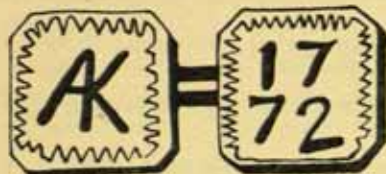
UNIDENTIFIED. *Obv.* **GL**. Oblong, with border, 11 × 10. Slimon. Illustration 315.

UNIDENTIFIED. *Obv.* Monogram, perhaps intended for **MHL**. Rudely oblong, with border, 10 × 9. Aberdeen. Illustration 316.

UNIDENTIFIED. *Obv.* **M** | **I.G.** | **1719**. Round, with border, 14. Aberdeen. Illustration 317.

UNIDENTIFIED. *Obv.* **CT**, with symbol resembling imperfect *fleur-de-lys* between the letters. Irregularly oblong, 13 × 7. Doubtfully ascribed to Aberdour, Aberdeenshire. Glasgow. Illustration 318.

UNIDENTIFIED. *Obv.* Castle, with date **1751** below. *Rev.* Blank. Square, with border, 12. Aberdeen. Illustration 319.



1. ABBOTRULE.



2. ABDIE.



3. ABDIE.



4. ABERCORN.



5. ABERDALGIE.



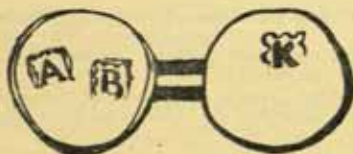
6. ABERDEEN (OLD MACHAR)



7. ABERLADY.



8. ABERLADY.



9. ABERLADY.



10. ABERNETHY.



11. AIRDRIE.



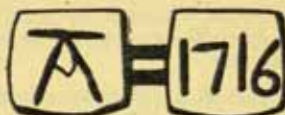
12. ANNAN.



13. APPLEGARTH.



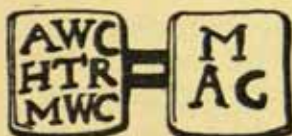
14. ARDERSIER.



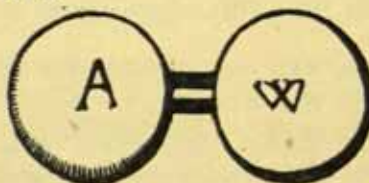
15. AUCHTERDERRAN.



16. AUCHTERGAVEN.



17. AUCHTERMUCHTY.



18. AVOCH.



19. AYR.



20. BALDERNOCK.



21. BALLINGRY.



22. BARA.



23. BENDOCHY.



24. BENHOLM.



25. BLAIR ATHOL.



26. BOHARM.



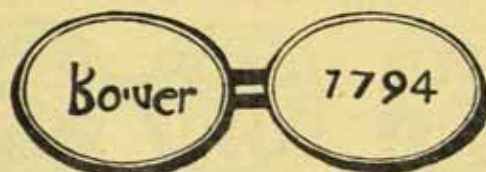
27. BOTHWELL.



28. BOTHWELL.



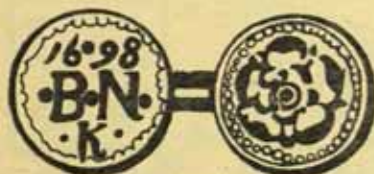
29. BOWDEN.



30. BOWER.



31. BRECHIN.



32. BRECHIN.



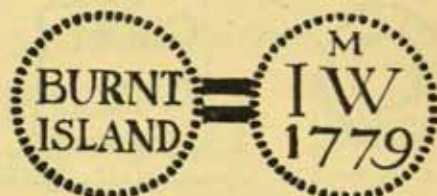
33. BRECHIN.



34. BRECHIN.



35. BROUGHTON.



36. BURNTISLAND.



37. CAMBUSNETHAN.



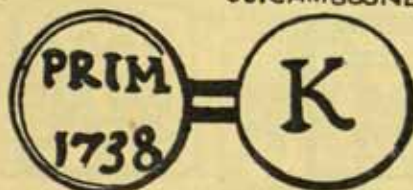
38. CAMBUSNETHAN.



39. CAMPBELTOWN.



40. CARLUKE.



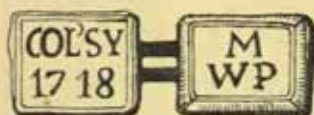
41. CARRINGTON.



42. COCKPEN.



43. COLLACE.



44. COLLESSIE.



45. COLVEND & SOUTHWICK.



46. CONTIN.



47. CRAIG.



48. CRAIG.



49. CRAMOND.



50. CRANSHAW'S.



51. CRIMOND.



52. CRIMOND.



53. CRIMOND.



54. CRIMOND.



55. CRIMOND.



56. CRIMOND.



57. CROMARTY.



58. CROMDALE.



59. CUMBERNAULD.



60. CURRIE.



61. DALKEITH.



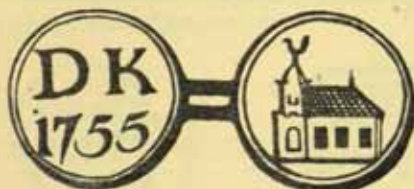
62. DALKEITH.



63. DALKEITH.



64. DALKEITH.



65. DALKEITH.



66. DALZIEL.



67. DAVIOT.

SCOTTISH CHURCH TOKENS, 1941.



68. DEER, NEW.



69. DEER, OLD.



70. DEER, OLD.



71. DOLLAR.



72. DREGHORN.



73. DUMBARTON.



74. DUMFRIES.



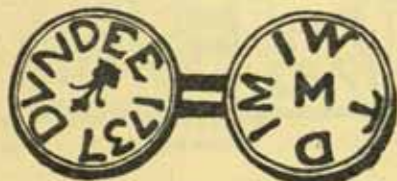
75. DUMFRIES.



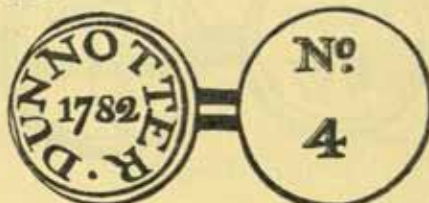
76. DUMFRIES.



77. DUNLOP.



78. DUNDEE.



79. DUNNOTTAR.



80. DUNS.



81. DUNSCORE.



82. DUNSCORE.



83. DUROR.



84. DYCE.



85. DYKE.



86. EASSIE & NEVAY.



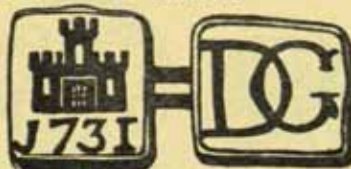
87. EASTWOOD.



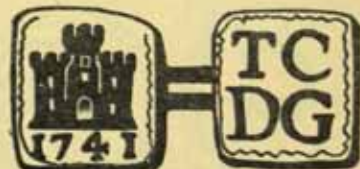
88. EDDERTON.



89. EDDLESTON(?)

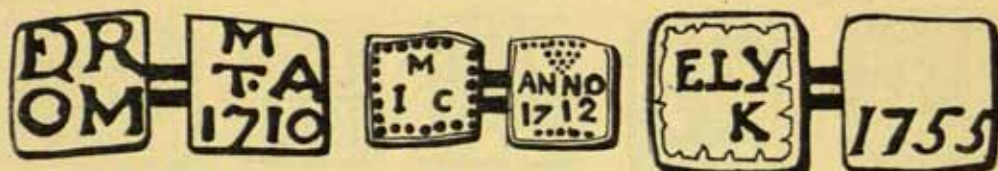


90. EDINBURGH.



91. EDINBURGH.

SCOTTISH CHURCH TOKENS, 1941.



92. EDROM.

93. ELIE.

94. ELIE.



95. ERROL.



96. ERROL.



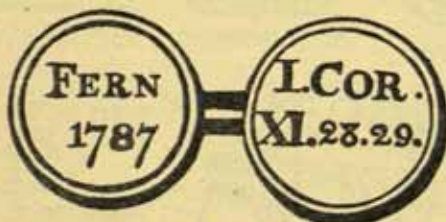
97. FALKLAND.



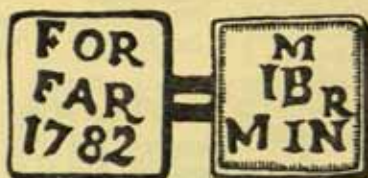
98. FARR.



99. FARR.



100. FERN.



101. FORFAR.

102. FETLAR
& N. YELL.

103. FORGANDENNY.



104. FORT WILLIAM.



105. FORT WILLIAM.



106. FRASERBURGH.



107. GALSTON.



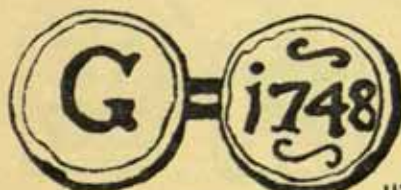
108. GAMRIE.



109. GARVALD & BARA.



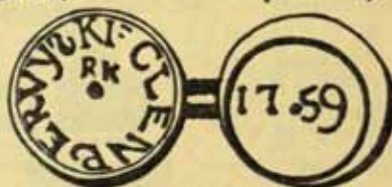
110. GLADSMUIR.

111. GLASGOW
(BARONY).

112. GLAMIS.



113. GLASSERTON.



114. GLENBERVIE.



115. GLENISLA.



116. GLENORCHY.



117. GOLSPIE.



118. GOVAN.



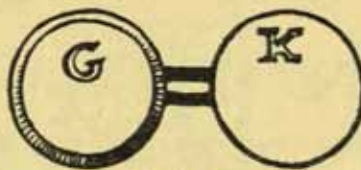
119. GOVAN.



120. GREENOCK.



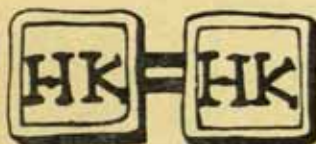
121. GREтна.



122. GREтна.



123. GUTHRIE.



124. HASSENDEAN.



125. HAWICK.



126. HERIOT.



127. HOBKIRK.



128. HODDAM.



129. HOUSTON & KILALLAN.



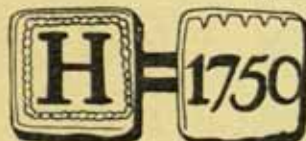
130. HUTTON & FISHWICK.



131. HUTTON & FISHWICK.



132. HUTTON & FISHWICK.



133. HUTTON & FISHWICK.



134. INCH.



135. INCH.



136. INCHINNAN.



137. INNERLEITHEN(?)



138. INNERLEITHEN(?)



139. INNERLEITHEN(?)



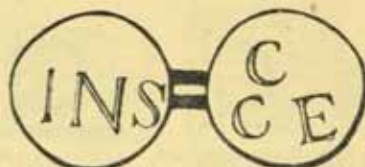
140. INNERWICK.



141. INVERAVON.



142. INVERESK.



143. INVERNESS.



144. IONA.



145. IRVINE.



146. JEDBURGH.



147. JOHNSTONE (DUMFRIES).



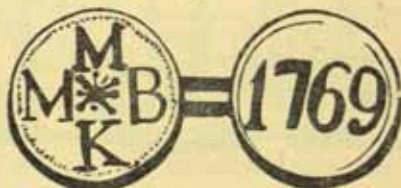
148. KELTON.



149. KETTINS.



150. KILBARCHAN.



151. KILBIRNIE.



152. KILCALMONELL & KILBERRY.



153. KILCHRENAN.



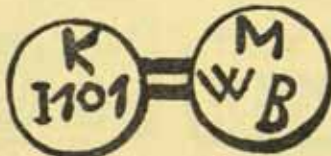
154. KILCONQUHAR.



155. KILDRUMMY OR LOGIE-COLDSTONE.



156. KILKENZIE.



157. KILMANY.



158. KILMARNOCK.



159. KILMARONOCK.



160. KILNINIAN & KILMORE.



161. KILPATRICK, NEW.

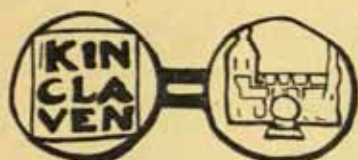


162. KILPATRICK, NEW.



163. KILSPINDIE.

SCOTTISH CHURCH TOKENS, 1941.



164. KINCLAVEN.



165. KINGLASSIE.



166. KINLOSS.



167. KINNEFF.



168. KIRKCOLM.



169. KIRKCOLM.



170. KIRKMAHOE.

171. KIRKMICHAEL
(AYR).

172. KIRKNEWTON.



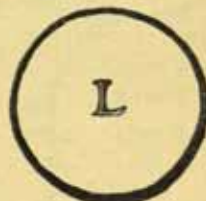
173. KNOCKANDO.



174. KNOCKANDO.

175. LAMINGTON
& WANDEL.176. LAMINGTON
& WANDEL.

177. LANGHOLM.



178. LANGTON.

179. LARBERT
& DUNIPACE.180. LARBERT
& DUNIPACE.

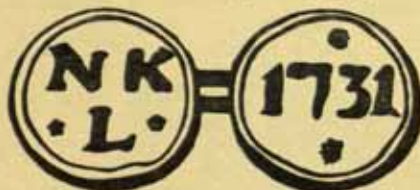
181. LARGS.



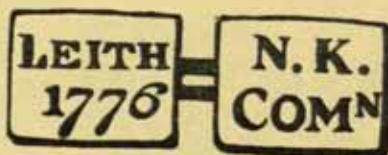
182. LASSWADE.



183. LECROPT.



184. LEITH, NORTH.

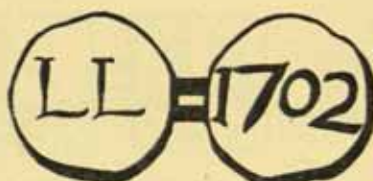


185. LEITH, NORTH

SCOTTISH CHURCH TOKENS, 1941.



186. LEITH, SOUTH.



187. LINLITHGOW.



188. LINRATHEN.



189. LINRATHEN



190. LOCHALSH.



191. LOCHCARRON.



192. LOCHGOILHEAD.



193. LOCHGOILHEAD.



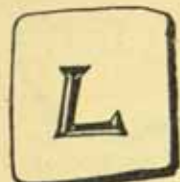
194. LOCHLEE.



195. LOCHWINNOCH.



196. LOCHWINNOCH.

197. LOGIE
(DUNBLANE).

198. LOGIE-EASTER.



199. LOGIEPERT.



200. LONGFORMACUS.



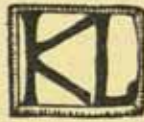
201. LONGSIDE.



202. LOTH.



203. LOTH.



204. LOTH.



205. LUCE, OLD.

206. LUNDIE
& FOWLIS.

207. LUSS.



208. MADDERTY.



209. MADDERTY.



210. MARYTOWN.



211. MAUCHLINE.



212. MAXTON.



213. MAXTON.



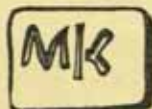
214. MAXTON.



215. MAYBOLE.



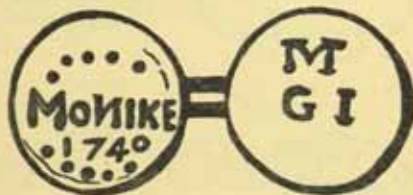
216. MELROSE.



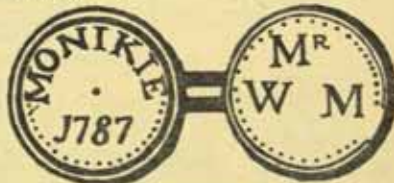
217. MOFFAT.



218. MONIFIETH.

219. MONKLAND
NEW.

220. MONIKIE.



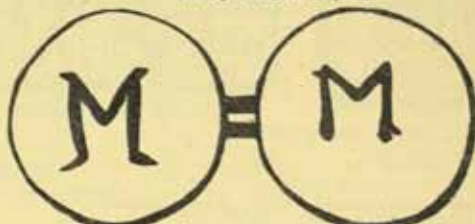
221. MONIKIE.



222. MONQUHITTER.



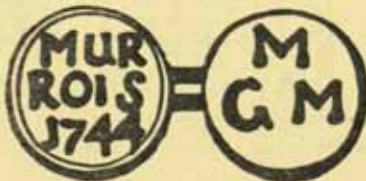
223. MORVEN.



224. MOUSWALD.



225. MOY.



226. MURROES.



227. NEWBURN.



228. NESTING.



229. NEWBURGH.



230. NEW MACHAR.



231. NEW MACHAR.



232. NIGG.



233. NORTHMAVINE.



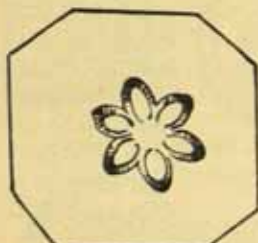
234. OCHILTREE.



235. ORDQUHILL.

236. PAISLEY
(ABBAY).

237. PARTON.



238. PENNINGHAME.



239. PERTH.



240. PETTY.



241. PITSLIGO.



242. PITTENWEEM.



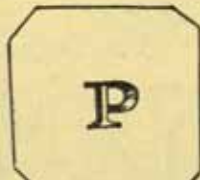
243. PITTENWEEM.



244. PORT-GLASGOW.



245. PORT-GLASGOW.



246. PORTREE.



247. PORTSOY.



248. PRESTONKIRK.



249. PRESTONKIRK.



250. RAFFORD.



251. RAYNE.



252. RESCOBIE.





253. ROGART.



254. ROSNEATH.



255. ROXBURGH.



256. ROXBURGH.



257. RUTHERGLEN.



258. RUTHWELL.



259. ST. MARTINS.



260. ST. MARTINS.



261. ST. MARTINS.



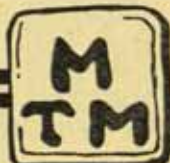
262. ST. MARTINS.



263. SANDSTING & AITHSTING.



264. SCOONIE.



265. SHOTTS.



266. SKENE.



267. SLAMANNAN.



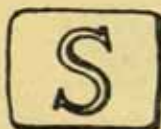
268. SLAMANNAN.



269. SLAMANNAN.



270. SLAMANNAN.



271. SLEAT.



272. SMALHOLM.



273. SOUTHEND.



274. SPROUSTON.



275. SPROUSTON.



276. STAIR.



277. STONEHOUSE.



278. STRATHY.



279. SWINTON & SIMPRIN.



280. TARBAT.



281. TARBOLTON.



282. TEALING.



283. TERREGLES.



284. TINGWALL.



285. TINWALD & TRAILFLAT.



286. TONGUE (?)



287. TONGUE (?)



288. TOROSAY.



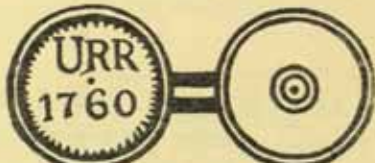
289. TRINITY GASK.



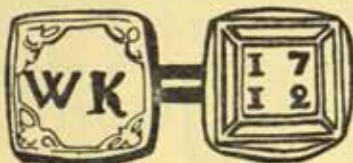
290. TYNRON.



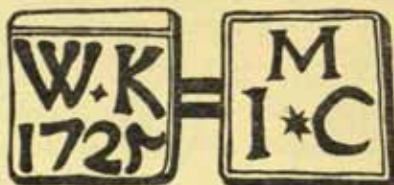
291. UDNY.



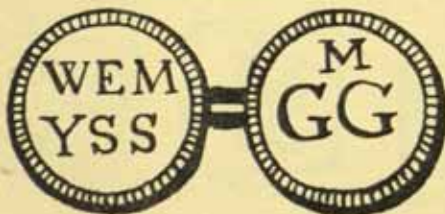
292. URR.



293. WEMYSS.



294. WEMYSS.



295. WEMYSS.



296. WEST CALDER.



297. WHITEKIRK & TYNINGHAME.



298. WHITHORN.



299. WHITTINGHAME.



300. WILTON.



301.



302.



303.



304.



305.



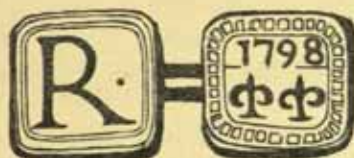
306.



307.



308.



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312.



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318.



319.

UNIDENTIFIED TOKENS
SCOTTISH CHURCH TOKENS, 1941.

XI.

SIXTEENTH AND SEVENTEENTH CENTURY MURAL DECORATIONS AT THE HOUSE OF KINNEIL, BO'NESS, WEST LOTHIAN. BY JAMES S. RICHARDSON, F.S.A.Scot., H.M. Inspector of Ancient Monuments for Scotland.

Read March 10, 1941.

During the reign of James V. the close connection between the Scottish Royal Court and that of France had a marked influence on the plastic art and architecture of Scotland. In the process of borrowing from France, no one played a more important part than Sir James Hamilton of Finnart, the King's Master of Works, who had spent some time at the French Court. This French influence lasted until the Reformation, when the Low Countries with the Baltic towns supplied another avenue of Renaissance inspiration.

The early period of the Classic Renaissance style dates in France from about 1461. It was, however, during the reign of Francis I (1515-47) that this particular phase in art became more pronounced, about which time it was introduced into Scotland and adopted by craftsmen in stone and wood, some of whom at least had been trained on the Continent. Within a short period it had taken root, was emerging in a bold and opulent way, and assimilating, to some extent, the native character. This Franco-Scottish style reflected, in no uncertain manner, the minds that controlled and the hands that carried out the work of providing surroundings for those nurtured in a life of feasting, banqueting, and all the other delights and pleasures of courtly and social exuberance. To this influence and age belong the King's Palace at the Castle of Stirling,¹ part of the buildings at the House of Falkland, and the King's Fountain within the close of the Palace of Linlithgow.² At these monuments can be seen the work of sculptors in stone—in the form of figure, medallion, corbel and pillar display—and in our museums examples of the wood carver's art which have been taken from their original settings. These artist-craftsmen delighted in depicting portrait heads of kings, queens, courtiers, warriors, and mythical heroes set within wreaths or medallions, conventional foliage, dolphin's heads, scrolls and heraldic devices. In wood craftsmanship, to this category belong the famous "Stirling Heads,"³ which

¹ Official Guide, The Castle of Stirling, p. 10.

² Official Guide, The Palace of Linlithgow, pp. 5, 15.

³ Lacunar Strevelineuse, *A Collection of Heads . . . in Stirling Castle* (Edin., 1817).

once formed the bold enrichments of the oak ceiling in the King's Presence Chamber at his royal house on the Castle rock at Stirling. Also, belonging to this period, are the four portrait busts on panels from a screen made for the hall at the Castle of Killochan¹ in Ayrshire. These, set in panelling of a slightly later date, are now in the National Museum of Antiquities.

The House, or Palace of Kinneil, on the western outskirt of the Burgh of Bo'ness, was built at the instance of James Hamilton, 2nd Earl of Arran, whose bastard brother and tutor was Sir James Hamilton of Finnart. The Earl married in 1532 Margaret, daughter of James Douglas, 3rd Earl of Morton. In 1536 he accompanied King James V to France, and after the death of that king became Protector and Governor of Scotland during the minority of Mary, Queen of Scots, a post which he held from December 1542 to April 1554.

Henry II, King of France, the Scottish queen's royal father-in-law, granted Arran the Duchy of Châtellérault, and on the 6th July 1548, at Dijon, conferred on the Scottish Earl the commission to receive the oath of the Order of St Michael and gave him the collar and jewel of the Order. After his return to Scotland, and during the troublesome times that followed, the Earl had to seek refuge in France where he remained for five years, coming back to his native country in 1569, to find that his palace at Hamilton and other residences which he had built and furnished liberally out of the national exchequer had been either burnt or damaged. In a contemporary record, in the form of a letter,² there is a statement, that "the Duke's houses of Kinneil and Linlithgow are demolished by powder," but this statement should not be taken too literally. As far as Kinneil is concerned, any such damage would be confined to the Tower or main building, which was of a semi-fortified nature.

In 1538 Arran began to build the palace of Hamilton, and, a few years later, the work at Kinneil claimed his attention. This latter enterprise, however, appears to have extended over a considerable period, and for some time after the execution in 1540 of Hamilton of Finnart, the Earl's kinsman and adviser. From 1546 to 1550 large sums were spent on building and furnishing the tower at Kinneil,³ and in 1553 the foundation of the Palace,⁴ i.e. the eastern wing, was laid. This house, situated by the Forth, and within three miles of the Royal Palace of Linlithgow, was incidentally one which the young queen could visit when on an excursion to the seashore.

The mansion occupies a site on the raised sea-beach overlooking the estuary of the Forth and has a prospect of the lands and hills beyond and the more distant Grampians. The buildings stand close to the eastern edge of a narrow and steep ravine. The main building is the

¹ *Proc. Soc. Ant. Scot.*, vol. lxxiii. p. 324.

² *Calendar of State Papers, Foreign*, 1569-1571, p. 257.

³ *Accts. Lord High Treasurer*, vol. ix.

⁴ *Ibid.*, vol. x. p. 207.

oldest part. It is in the form of a large oblong tower, five storeys high, with the front facing east. Close to its north end is situated the palace, begun in 1553, a long three-storeyed wing extending eastward and terminating in crow-stepped gables, one facing east and the other north. Alterations were carried out during the first quarter of the seventeenth century, when two storeys were added to a low north wall, windows were built up and others were introduced into the building. In or about 1677 a reorganisation took place when the 1st Duke of Hamilton had the interior arrangement of the tower and its tower-head reset, adding a pavilion to each end. That to the south contained a main stairway and a service turnpike, the other, also furnished with a turnpike, incorporated existing masonry connecting the tower with the north-eastern wing. Alterations were made in the fenestration of the front of the tower, and certain modifications were carried out on windows of the north-east wing. The original fixed leaded lights and iron casements were replaced by astragalled sash-and-case windows of wood, such as at that time were coming into fashion in Scotland. In this late readjustment the Regent's great armorial of stone was preserved in the part of the wall incorporated in the north pavilion. A housing for a panel of similar dimensions was made in the south pavilion, but the coat-of-arms intended for it seems never to have been provided.

By 1936, seven years after the publication of the Royal Commission on Ancient Monuments' tenth report with the inventory of monuments and constructions in the Counties of Midlothian and West Lothian (1929), the building had passed into the hands of the Town Council of Bo'ness. In that year the Council sold to a house-breaker the right to demolish and take away whatever he wished. By the end of the summer the house of Kinneil had been wrecked, and the last phase of destruction was reached. The north-east wing had been unroofed, the gables taken down in part, and the floor joists were in the final stage of dountaking and removal. Attention having been called to this state of affairs, I visited the monument with Mr Stanley Cursiter, Director of the National Gallery, who had received from a correspondent intimation that traces of decoration had been noted where old plaster was exposed. The evidence which we saw was sufficient to justify the First Commissioner of His Majesty's Works taking immediate action, and, by an arrangement with the Town Council of Bo'ness, the part of the building which contained two rooms exhibiting traces of mural decoration was taken over under guardianship on behalf of the nation. The Town Council gave every assistance by recovering from the house-breaker a coffered oak ceiling removed from one of the rooms, and by setting up the temporary protections necessary to safeguard the painted plaster from the weather. The first measure undertaken by the Ancient Monuments Department was to restore the gables and

slated roof over the part of the building with which it is concerned, the next was to reset the sixteenth century coffered ceiling, to uncover, and patch where necessary, the plaster surface, and apply preservative treatment to the decorations. These delicate operations were in the hands of the Department's specialist¹ and have resulted in a noteworthy achievement of patience and skill. To-day the history of art in Scotland is the richer by possessing, *in situ*, the most important example of early domestic mural decoration so far discovered in the country.

The undertaking has now been completed, and, to produce the appropriate effect, the windows of the two rooms in question have been furnished with leaded lights and iron casements in the original style and the floors are paved with stone. To ensure the condition of the exhibits a heating system has been introduced.

A few fragments of sixteenth century ceiling boards were fortunately recovered from the "lumber" collected for burning by the contractor, but others, unfortunately, had already gone to the fire. These, along with fragments of later decorated plaster which had been removed in uncovering the earlier painting in the vaulted northern room, are now exhibited in the room above this chamber.

The great stone armorial² representing the ducal arms of Châtelherault was also handed over by the Local Authority. It has been taken down from the pavilion wall, cleaned, repaired, and set up for exhibition in the south vault of the ground floor. The shields represented are those of the Governor³ and his Lady.⁴ Each shield is ensigned with a ducal coronet, and the dexter shield, that of the Duke, is encircled by the collar of the Cockle with the jewel of the Order of St Michael attached. The Arms are: Quarterly, 1st and 4th three cinquefoils; 2nd and 3rd a lymphad with flag at the masthead. The other shield is within a *cordelière*⁵ of eight knots, and on it are the Arms of the Duchess—*Dexter* Quarterly, 1st and 4th, Arran; *Sinister*: on a chief two mullets for Douglas of Morton. Below each shield is a supporter couched, that under the Governor's shield being an antelope gorged with a ducal coronet and chained. Below the other arms is the Douglas supporter: a wodehouse, holding a bludgeon in his left hand. The achievements are enclosed in an architectural setting representing a colonnade rising from a podium containing two panels. The Regent's motto "THROUGH," on a pelta-shaped tablet, is set alongside a carved representation of a frame-saw. His lady's motto

¹ Mr John Houston, F.S.A.Scot., Architectural Assistant.

² The stone measures 6 feet 4 inches high by 4 feet 6 inches wide.

³ *Scottish Heraldic Seals*, Stevenson and Wood, vol. ii. p. 391. The second seal of the Governor shows the collar and jewel of St Michael encircling the shield. This seal is attached to a Charter dated May 8, 1552.

⁴ *Scottish Armorial Seals*, Macdonald, p. 88, No. 731. The seal of the Duchess on a document dated 1560 shows the shield within a *lae d'amour*. Laing, vol. i. No. 406.

⁵ The *cordelière* encircles the arms of a wife or widow.

"SICKAR" is on a similar tablet, beside which a fetterlock is shown. The saw and the lock each represent a rebus. The respective mottoes thus read "SAW THROUGH" and "LOCK SICKAR" (sure). The arms have been tinctured and the rest of the composition painted.

The two rooms which form the background of this communication are situated on the first or principal floor of the north-east wing, and occupy a position at the eastern limit of the building, the one being set behind the other on an axis running north and south. The south room, now reset to its original arrangement, measures 20 feet 6 inches long by 17 feet 6 inches wide, and is 16 feet high. There have been two entrances, one in the west wall, the other in the north, and both near the N.W. corner of the room. The fireplace is in the middle of the east wall with a large window to the north and a garderobe doorway to the south. In the south wall is a large window, which is not central but nearer the east wall. The wall surfaces are covered with a thin coating of mortar-plaster, except at the margins of the doorways, the fireplace and the splayed window ingoes, where the dressed stonework is exposed. The soffits of the segmental arches at the windows are also unplastered. This room contains the coffered oak ceiling (Pl. XXXV), which is set in a pattern framework of mitred ribs composed of small and various mouldings, some of which have been painted in black to imitate ebony inlay. The whole is set on oaken boards, which show traces of outlining with bands of red paint, and there are small decorations in the same colour at the outer angles of the panels. In its character the ceiling shows a marked Italian influence, for which prototypes are to be found in the Palace of Fontainebleau in the galleries designed by the Italian architects at the Court of Francis I. Two other ceilings of this kind—not, however, so pronounced in their pattern arrangements—are to be seen in the second floor of the James V tower at the Palace of Holyroodhouse.

The north vaulted room is 20 feet long by 15 feet wide, the springer line of the barrel vault is 9 feet from the floor, and the crown 15 feet. The entrance is in the west wall at the south end. Another doorway in this wall gives access to a mural garderobe, and between these is a wall recess with a segmental arched head, in which probably stood a buffet. A large window occupies the central space of the north wall and one of lower dimensions to the north of a central fireplace in the east wall. The communicating doorway in the south partition wall abuts the entrance doorway first mentioned which leads from a turnpike stair; as in the south room, there are stone margins round the windows, doorways, and fireplace. Both rooms overlooked a garden which had been liberally planted out with flowers¹ and shrubs² brought from the Duke's Palace at Hamilton,

¹ *Accts. Lord High Treasurer*, vol. x, p. 174.

² *Ibid.*, p. 144. Trees were obtained from Holyroodhouse, Fife, Strathearn, and the Carse of Gowrie.

and therefore it seems likely on this account that they were the private chambers of the Lady of the House.

In the period with which we are concerned, the royal, episcopal, and baronial residences were to some extent furnished with wall coverings of tapestry imported from the factories at Arras, Tournai, Brussels, and Antwerp. Many of these were designed by well-known artists of the period, or show influences of their work, the cartoons being prepared by artisan draughtsmen trained in schools of design connected with tapestry factories. As the hangings were for the most part of large size, the scale of the figure-work and detail was correspondingly large, and in most cases the composition was of a compact nature. It was not unusual for the author to label each subject portrayed with an appropriate inscription in verse and to weave the names of the persons represented into their garments.

Conforming to the fashion in architecture of this period, the designs produced for tapestries were a blending of the Italianate style and the so-called Gothic tapestry tradition—illustrating a transition in style, which was adopted by the school of Flemish cartoon painters who collaborated with Jean Van Roome¹ and the de Camps and which marked the last milestone of the true spirit of tapestry art. Architectural framework and buildings in the foreground show, in exaggerated perspective, pillar, lintel, and arch compositions, which, strictly speaking, cannot be analysed in terms of pure classic detail but are, nevertheless, allied in a figurative manner to the Orders of Architecture.

In the background compositions, the landscapes of trees and rugged crags, the castles set up on high, the clustered towers and gables of houses rising within walled-towns, follow the common tradition so well known in pictures, engravings, and woodcuts of the fifteenth and sixteenth centuries. The foreground assemblage of verdure and flowers displays the conventional portrayal of the time. The persons depicted are dressed in the garments of the period, the warriors in pseudo-classic armour.

The range of subjects is wide, but they can be classified in some half-dozen main categories, such as the Old and New Testaments, Classical Histories and Mythologies, Mediæval Moralities, Allegories, and tales of Chivalry and Romance. Besides these, subjects were chosen from Hunting, Military, other genre types, and also from the Months and Seasons. The fashion for verdures with and without animals and birds was very popular. From Scottish Royal inventories² it is easy to judge the number of tapestries, and the subjects most favoured.

¹ *Apollo*, vol. xxii., No. 127, p. 32.

² *Acts. Royal Household*, H.M. Reg. Ho. "The Creation of the World," "Auld Testament and New," "Solomon"; "The Story of Susanna," "Reboam," "Maliese," "Percuis," "Tobias," "Story of Troy," "Aneas," "Hercules," "Marcus Coriolanus," "Apis and ither Beasts," "The Unicorn," and "The Story of the Tryumphand Dames."

It was usual to have a *tapissier* in attendance in the Royal Household, and King James V brought one with him from France in 1538, to look after the royal collection of tapestries and other hangings.¹ This was "Gilzeame, tapistre," who, "at the King's command, to mak him, his wiff and barins reddy to pas in Scotland witht his grace,"² received the sum of twenty crowns. During Queen Mary's reign three such men are named in the household accounts—Nicolas Carbonier,³ David Lieges,⁴ and Peir Martin.⁵

In cases where tapestries could not be afforded, imitations in water paint were sometimes produced on the plaster surfaces. Such decorations were probably the work of master *tapissiers*, and resembled the large cartoons which were supplied to the tapestry weavers for copying on the looms.

In the Kinneil mural decorations of the Governor's time the pigments used are: black, confined to line drawing; white, applied in washes; grey tints used in shading and for a ground wash, and russet-red for the infilling and background. Ochre is employed sparingly for emphasizing hair, the heraldic supporters, the collar and jewel of the Order of St Michael, and generally for animals and birds entwined in the foliaceous scrolls.

The brushwork was applied on the plaster surface when the ground was still damp, and, as this is uneven in places or gritty owing to particles of sand in the mortar composition, the artist, when making the bold and sweeping outlines of his composition, found difficulty in obtaining a fluent line with his brush, and was forced to retouch in places. A careful inspection shows that the cartoonist used a style to make incised hair lines on the plaster to coincide with the major outlines of his compositions. These slightly formed indentations suggest that they were made in transferring the design to the plaster, or alternatively they were formed when transferring the compositions on the wall, in the process of producing patterns for tapestry weavers.

THE SOUTH OR PARABLE ROOM.

The decoration in this room gives the impression of an assemblage of large tapestry cartoons, each one related to its particular wall surface yet forming part of a general and comprehensive scheme drawn on a background of antique parchment tone. The north, west, and south walls are arranged in four horizontal zones, namely the frieze, the picture panel, the dado band, and the dado.⁶ There is, however, no frieze on the east

¹ *Accts. Lord High Treasurer*, vol. vii, pp. 43, 44.

² *Ibid.*, p. 44.

³ *Ibid.*, vol. xi, p. lxii.

⁴ *Ibid.*, vol. xi, p. 155.

⁵ *Ibid.*, vol. xi, p. 109.

⁶ The frieze is 1 foot 8 inches deep, the picture panel 7 feet 6 inches. The dado band 1 foot 4 inches and the dado 3 feet 6 inches deep.

or principal wall, its place being taken by heraldic displays and an angel musician. The delineation throughout is significant of bold and direct brush draughtsmanship and the figures depicted are life size. The strong outlines are fluently achieved, and in-lines, representing light and shade, are well placed to add apparent depth where required; in some places, however, this is obtained by shading in grey wash tints of various intensity, in others the cartoonist has scumbled with whatever colours happened to be on his brushes to obtain the necessary notes of definition. In conventional pattern-work, the artist has used a colour wash on the field to throw out the design in a cameo manner.

The frieze (Pls. XXXV, XXXVII, XXXVIII) is confined within a double-lined margin, and the pattern is continuous except where interrupted by the window in the south wall. The composition consists of a series of portrait busts set within wreaths and centred at wide intervals, the intervening spaces being filled by supporting youthful satyr-like figures with arabesque acanthus-leaf tails, curling upwards, circling round and terminating in dolphinesque heads. Where the tails meet they are collared by a foliaceous annulet, above which a leafy cluster protrudes from the tails. Three medallions are disposed on each wall. Of these the best preserved are on the south wall, a head with a hair ribbon circlet tied at the back, and on the west wall a young queen with an antique crown, two laureated heads superimposed, the one that of a bearded man and the other that of a young woman, and a bearded king with an antique crown. All the faces are in profile. Human masks have formed the connecting links at the two western corners.

The picture panels illustrate episodes from the "Parable of the Good Samaritan," "St Jerome in the Wilderness," "St Mary Magdalene" and a figure representing Lucretia. Of these, the cartoons on the south wall, namely No. 2 of the Parable Series and St Jerome, are the best preserved. The others have suffered the loss of much of their outlining and detail, which have been obliterated, or removed by stugging or by cutting away the plaster. It is consequently difficult in some cases to visualize accurately the true nature of the composition. In spite of these apparent defects the interest and the appearance of this mural work is nevertheless impressive and by its large scale and boldness commands attention. The inscriptions throughout are in so-called Middle Scots and the lettering is of late Gothic character.

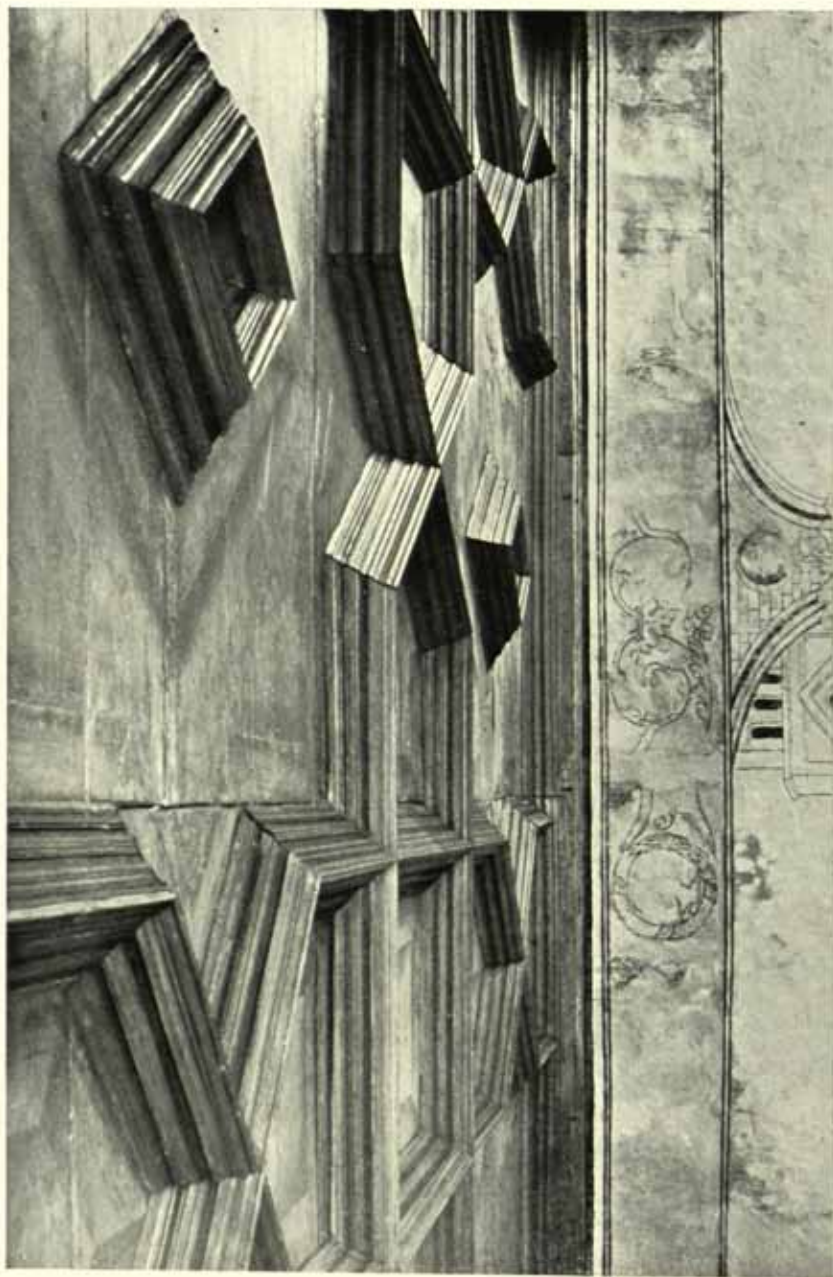
The Parable of the Good Samaritan¹ series. (1) (On the east wall over fireplace.) **The certain man falling amongst thieves** (Pl. XXXVI).—The picture shows the traveller being forced to the ground behind a tree by three warriors who are piercing his body with their swords: to the right of the group is an approaching spearman. The seated victim, dressed

¹ St Luke, chap. 10, ver. 30-35.

in a shirt and slashed trunks, is looking upwards, and supports his body on the left arm with the right hand upraised in supplication. A bearded warrior, standing behind the fallen man, is forcing his sword with both hands into the breast of the victim. The warrior is wearing a casque on his head and is dressed in a sleeved shirt of mail over which is worn a short-sleeved jerkin, emphasized by a reticulated pattern. Another soldier holds the head of his prey and forces the point of sword into the unfortunate's back. This thief wears a breast-plate over a sleeved garment and a knee-deep skirt of free flowing and lobated character. The third warrior is stabbing the right side of the fallen man with his sword, and his left arm is raised upwards from the elbow. This attacker is shown in a pleated kilt and breast armour with short lobated sleeves. The approaching figure poises his spear in front of a tree, behind which is to be seen an oval shield held in his right hand. The two tree trunks in the foreground are well drawn and have short lower branches stretching out from appropriate places. The boles tapering upwards have been lost in a mass of leafage, which has spread like a canopy over the episode depicted. Two large wreaths, disposed to balance the underlying composition, overhang the tree tops, each one bears in its upper half a shield ensigned with a ducal coronet and held by its appropriate supporters. The *dexter* shield is quartered with the Arms of Arran (Pl. XXXVII) and is collared with the insignia of the Order of St Michael, and the *sinister* shield bears the arms of Arran impaled with those of Douglas of Morton and is ringed with a love-knot; these armorials represent the heraldic achievements of James Hamilton, 2nd Earl of Arran, as shown after the year 1548 when he became a French duke, and his Lady—Margaret Douglas.

This cartoon, which is on a white ground, shows more shading in washes and brush lines of grey than any other of the compositions; ochre has been freely used in the heraldic roundels. A musician angel figure with outspread wings and flowing drapery, playing a lute, occupies the space between the sinister roundel and a column which margins the south end of the wall. The angel underlies the ceiling line, but a subject below—of which a hand pointing upwards remains—was destroyed when a window was formed in the place occupied by a garderobe, the entrance to which has now been restored.

(2) (The south wall, west of window.) **The Levite and the Priest pass by** (Pl. XXXVII).—The unhappy victim, with hair awry, is seated on the ground at the left-hand bottom corner of the cartoon. The hands, resting on the ground, are joined in supplication; the legs are crossed below the knees. He is looking upwards in the direction of the approaching Levite and Priest. The latter, absorbed in discussion, are wending their way on the road leading from Jerusalem. The figures are labelled "The



The oak coffered ceiling in the Parable Room.

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The Parable of the Good Samaritan.
The certain man falling amongst thieves.

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The Parable of the Good Samaritan.
The Levite and the Priest pass by.

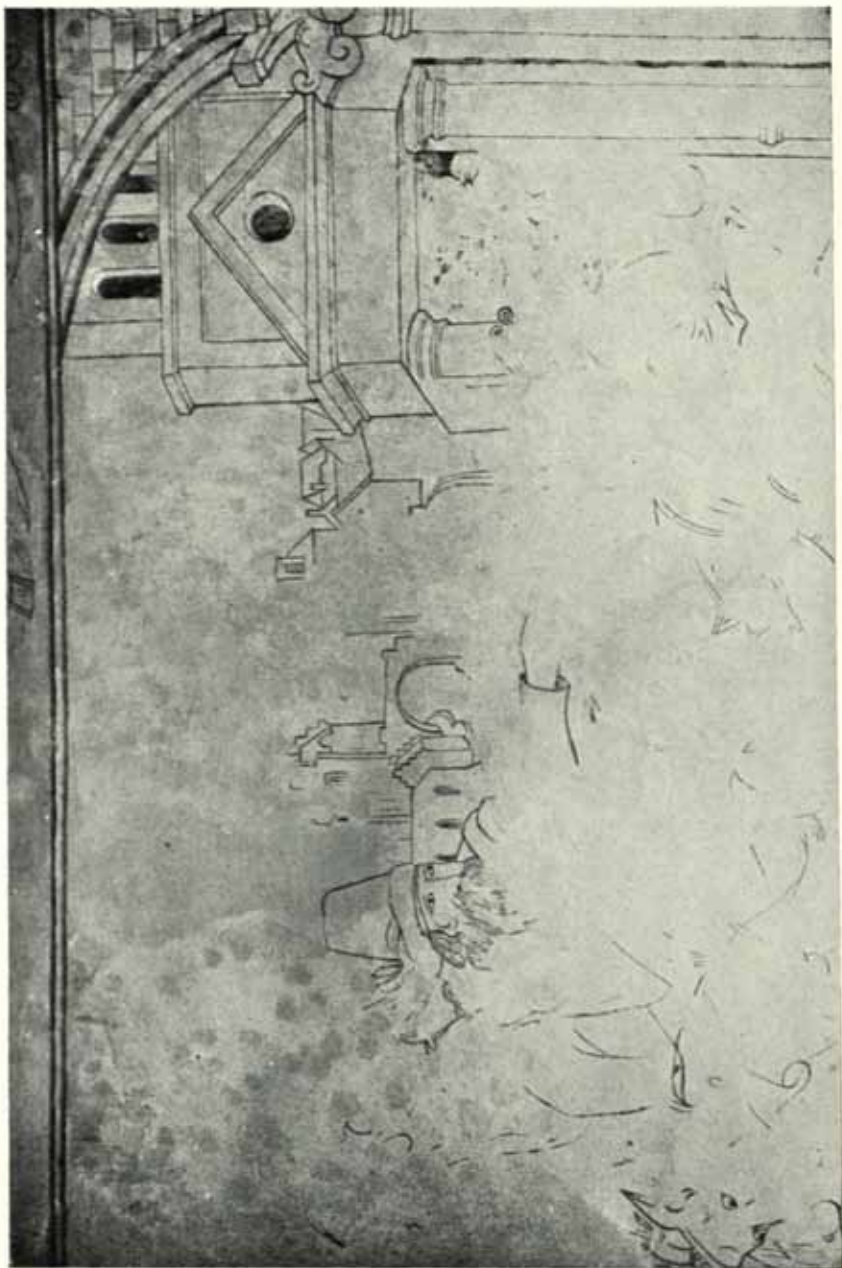
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The Parable of the Good Samaritan.
Parts of Scenes 3 and 4.

Crown Copyright reserved.



The Parable of the Good Samaritan.
The arrival at the inn (part only).

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The Parable of the Good Samaritan.
The Samaritan paying the two pence to the host.

JAMES S. RICHARDSON.

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The Parable Room.
St Jerome in the Wilderness.

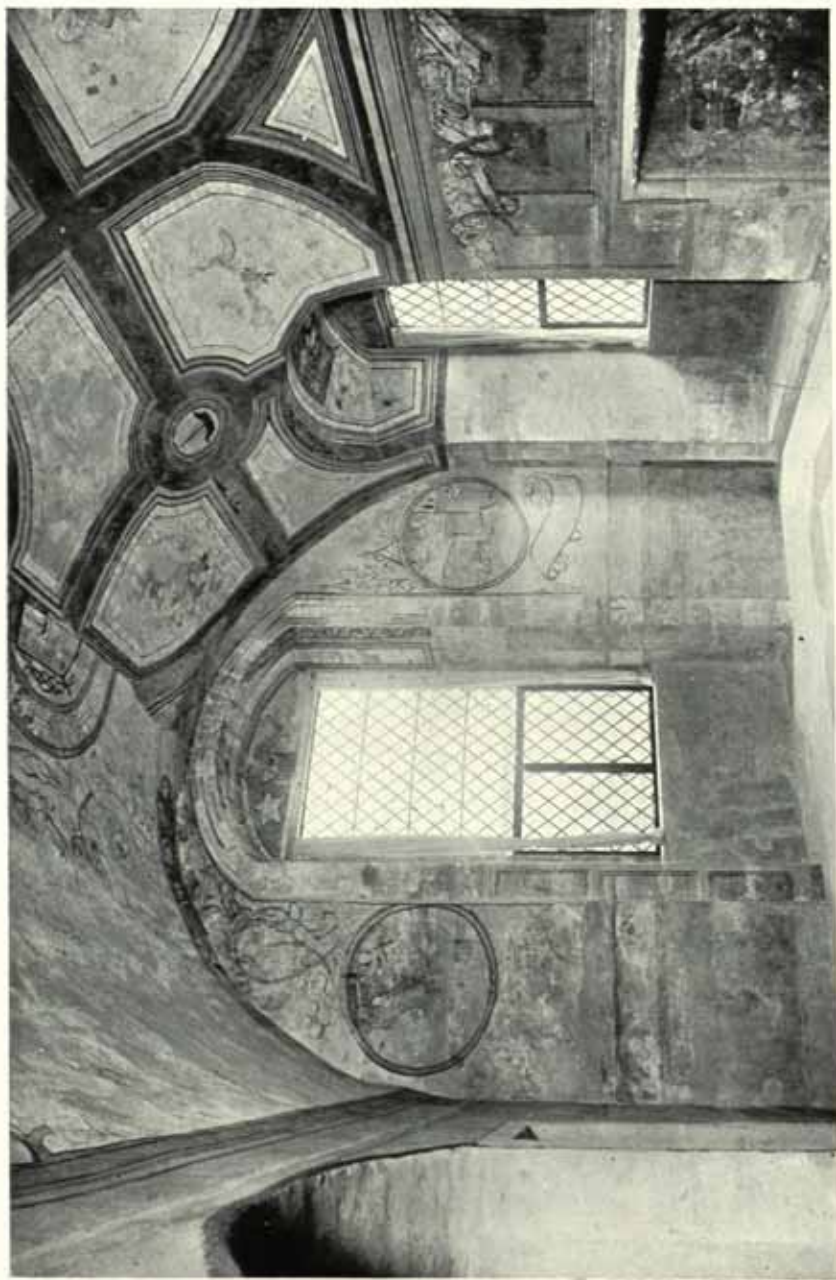
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The Arbour Room.
Samson and Delilah.

Craven Copyright reserved.



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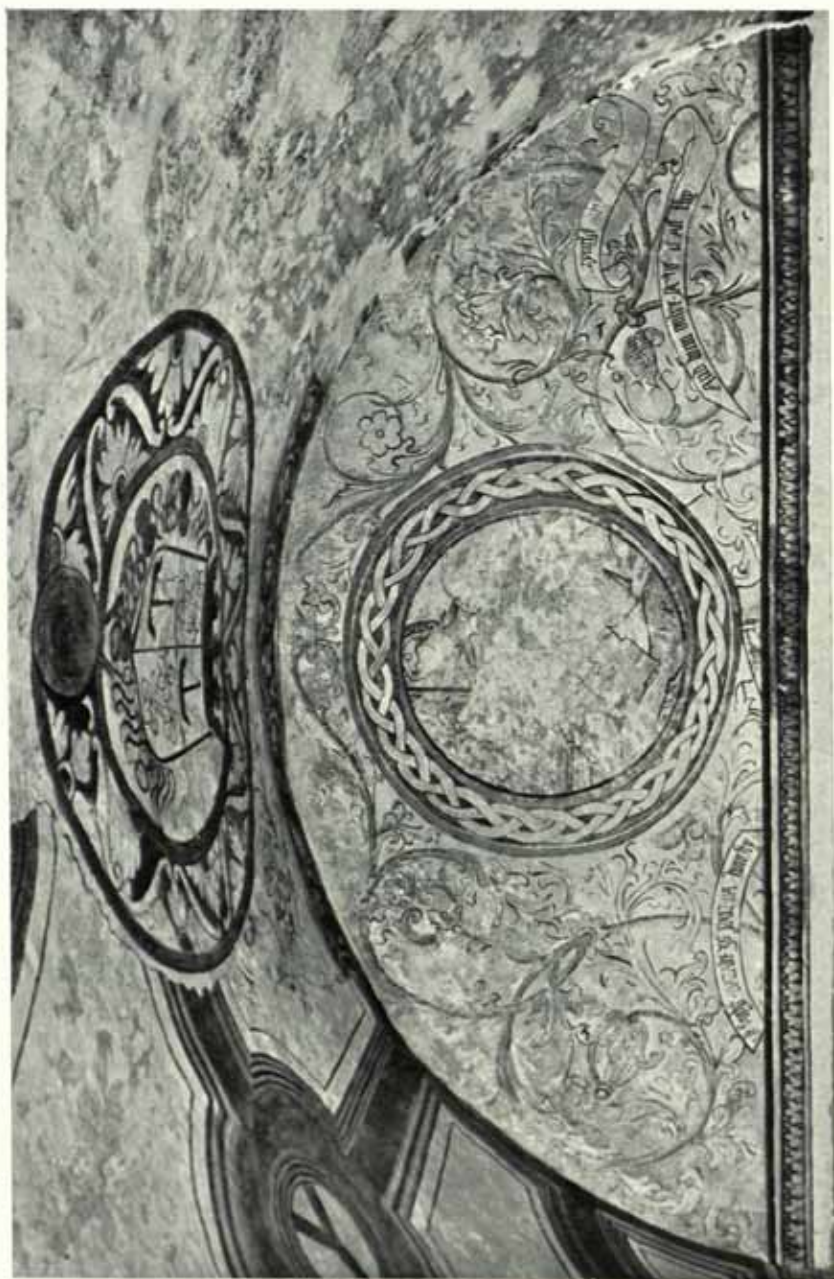
The north end of the Arbour Room.



The Arbour Room ceiling.

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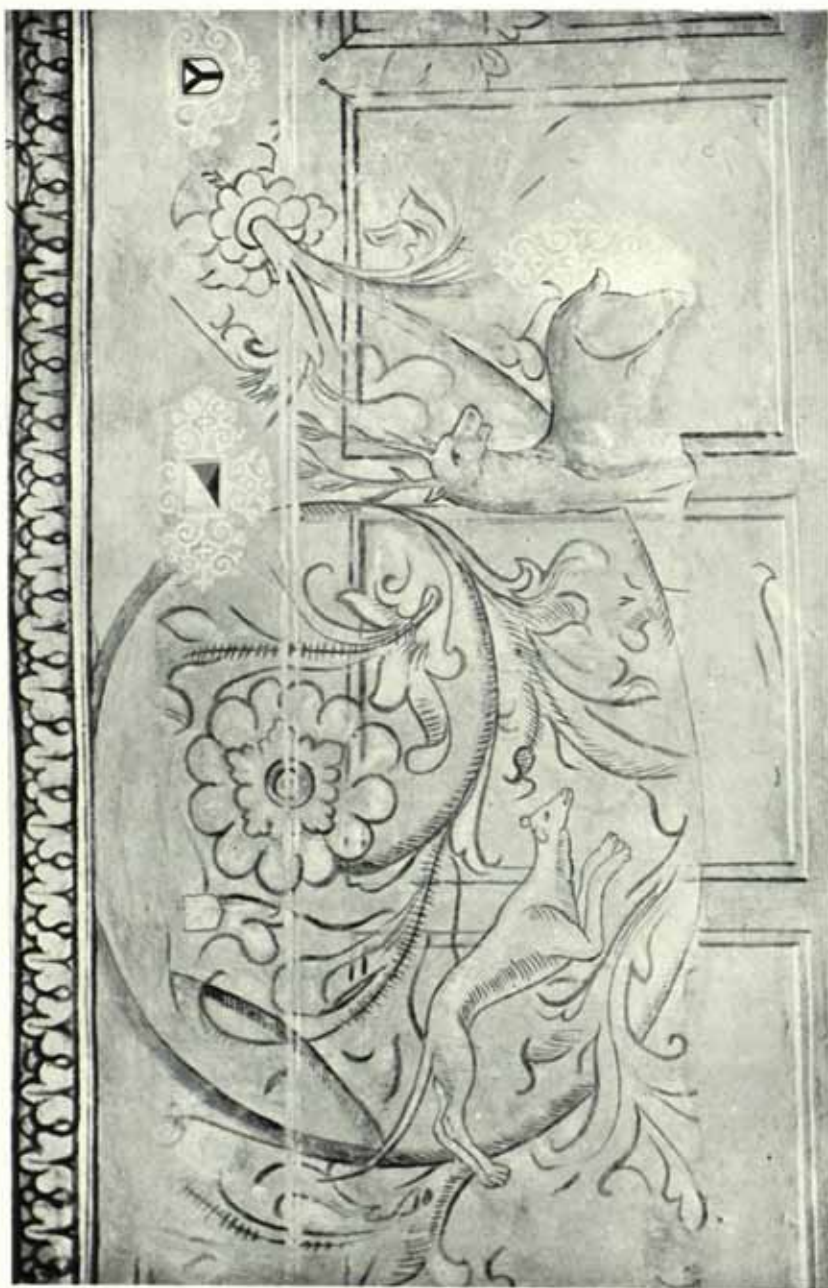
JAMES S. RICHARDSON.



The Arbour Room.

The upper part of the south wall.

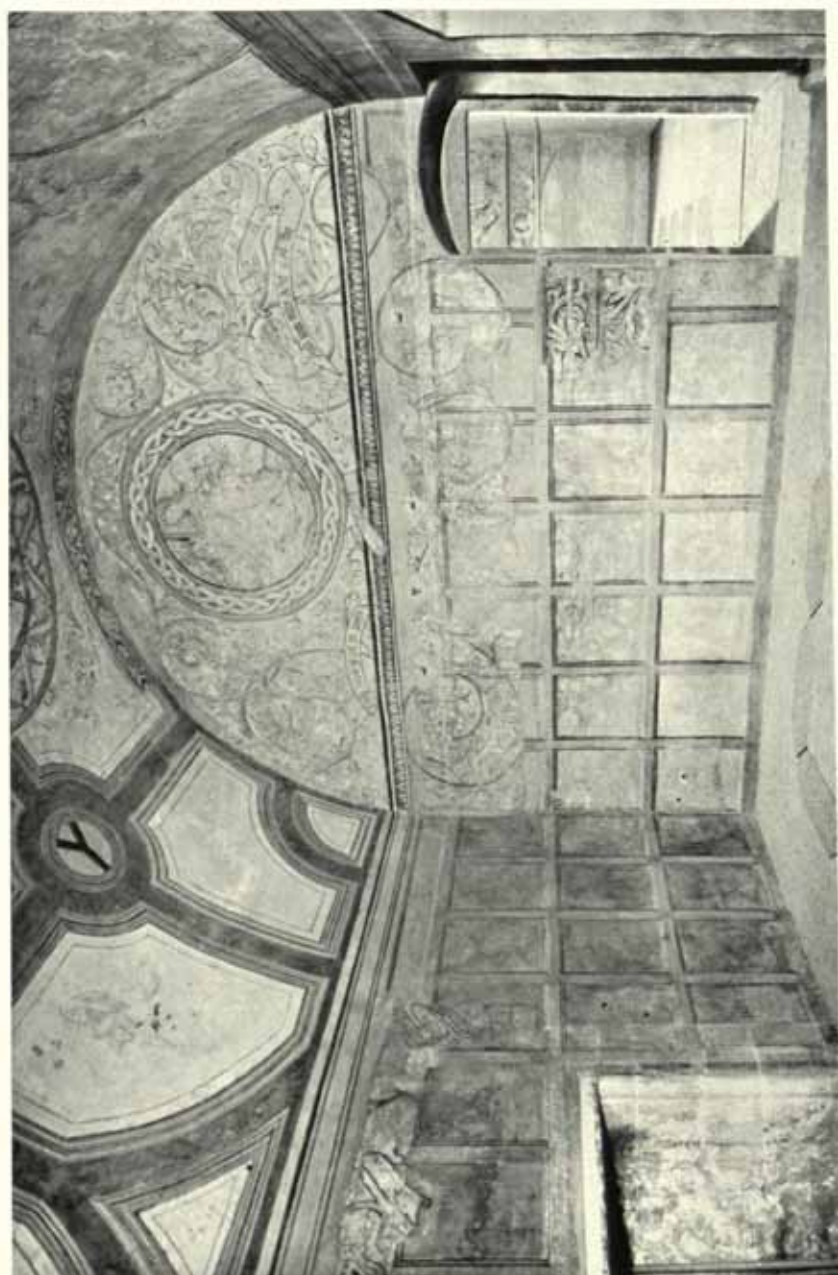
Crown Copyright reserved.



The Arbour Room.

Detail from the south wall, showing both periods of mural work.

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The south end of the Arbour Room.

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Priest" and "The Levite," but their identities are in reality transposed. The Levite is studying an open book which he holds in his left hand. He is bearded and wears a doctor's square cap and is dressed in a doublet, over which is worn a fur-lined long gown fringed in front with fur. Frills adorn the wrist, and a scarf hangs loosely over the shoulders. The legs are stockinged, and the only shoe visible is of the broad-toed type of the period. The Priest is clothed in imaginative vestments of a similar nature to those portrayed by Dürer in his woodcuts, where he shows the High Priest officiating in the Temple, and also in pictures by the Flemish painters. The face is clean shaven, the hair controlled and covering the ears, and on his head is a precious mitre ornamented in front with a crescent and two large oval crystals, while other pseudo-gems also adorn this head-piece. The vestments shown are a long flowing alb, over which is a dalmatic girdled at the waist with a sash, from which hangs a tasselled scrip. A lappet covers the shoulders; both this and the dalmatic are enriched with apparel, and the latter is fringed with pendant lobes. The priest's right hand rests on his girdle, and the left is raised in emphasizing some point in their discussion. Slightly behind him and to his left is a dog. Verdure is displayed in the foreground, and immediately behind the wounded man is a tree with well-arranged branches in the lower part of the trunk and terminating in a mass of leaves, on which is set an inscribed label. On the left of the picture, in the middle distance, is a grove, and behind this on rising ground is set a walled city representing Jerusalem. This assemblage of buildings occupies the upper right-hand corner of the picture, and is a well-defined composition of towers, gables, spires, and chimneys of balanced outline. On the left and above the head of the Levite is a large circular domed building of Byzantine character furnished with many circular headed windows and intended to represent the Temple. In front of it are two projecting portals from which roadways lead towards the foreground. On the extreme right is a square tower, of "stepped" construction, with two tiers of crenellated and machiolated wall-walks, each furnished with corner rounds. The roof is capped with a sharp-pointed spire. In advance of this building is a gatehouse with two entries flanked on one side by a lower defence which is buttressed and carries a spire. Between the great tower and the temple is set a large gabled building, behind which stands another with a hipped roof and a dormer window. Both of these buildings have tall chimney stacks.

The inscription on the label is a description of the incident portrayed—it appears to have taken the form of a stanza of five lines of the sort produced by the pen of Robert Wedderburn, part author of *The Gude and Godlie Ballatis*, who appears to have been living at Linlithgow about the time the cartoons were produced, or by some kindred Scottish Makar. The lines are badly obliterated and only a few of the words can be read:

This man the Levite bo[ok]
 The law of Nature quhilk [to]ld th . . .
 This priest ye law of [Isryal?]

(3) (West wall, south section.) **The Samaritan attending to the wounded man.**—This tableau is badly defaced, but three personages seem to have been represented in the right-hand lower half of the picture. One, in slashed breeches, is lying on his back, and the two others kneel or crouch behind him. The man on the extreme right, apparently the Samaritan, is extending the right hand towards the wounded one. His companion is now indicated only by part of a left leg, in slashed breeches and a high riding boot. There is also a suggestion of his right forearm raised, as if the hand were holding a vessel out of which wine is being poured. The left side of the composition shows a tree in the foreground, and between it and the kneeling group seems to be a mounted horseman. In the central background is a walled city (Pl. XXXVIII, left), approached by a roadway carried on a bridge and leading up to a gatehouse. The dominant building in the composition resembles a large church with a central high steeple, defensive towers and houses rising behind the city wall complete the representation. To the right a Bruegelesque rocky summit protrudes above a wooded landscape.

(4) (West wall, mid-section.) **The wounded man being mounted on the Samaritan's beast** (Pl. XXXVIII, right, part only shown).—Less than half of this picture is left, but that half is tolerably complete in detail. The wounded man is being helped on to the saddle of the Samaritan's beast and is resting his right hand on its off-flank. The helping Samaritan seems to be standing to the right behind the animal's head. Immediately behind, a horse looks on at what is happening.

In this picture the representation in the background of a walled city is the most interesting of the series. The houses are clustered on the right and disappear behind a rocky hill, on which stands a castle fortified with towers and bastions. To the left is the market-place with a cross in the centre. The market area is enclosed by the town wall, and in each of these three defensive barriers is a gatehouse, the most important being that in the wall farthest away. This building has a triple entry and is capped by clustered gables surmounted by a spire. Above is the label which once contained the appropriate paraphrase of the parable scene in question.

(5) (North wall, mid-section.) **The arrival at the inn** (Pl. XXXIX).—The cartoon has been much defaced, but the head of the Samaritan is clearly seen. He is bearded and has long hair and wears a tall hat with a flowing lambrequin. With the left arm extended the Samaritan is pointing with his hand in the direction of an entrance porch, evidently that of the

inn, which occupies the right side of the picture. Another man is ascending a flight of low steps which lead to the porch; he is seemingly helping to carry the wounded man within. Standing behind the Samaritan is a horse with the neck and head extending downwards near his right arm. The architecture of the hostelry is Italianate in style. The doorway is flanked on each side by a column of Tuscan type, and these carry a heavy lintel, moulded at the top, with a pediment above, the tympanum being pierced by a small circular window. Behind the pediment rises an attic with a low upper storey having three round-headed windows. In the pictorial background is the entrance to a walled town, to which a roadway leads up and through an arched entry. Within, on the left side is a high house with a steep pitched roof, and on the same side, but outside the gateway, is a smaller house: both these buildings have crow-stepped gables. To the right is another high, gabled house, and roofs of buildings are to be seen rising behind. Although the crow-stepped gable recalls to the mind a Scottish feature, it is to be remembered that it was a common form of gable treatment in some parts of France and also in the Low Countries. Houses with stepped gables are frequently shown in paintings and illustrations of the fifteenth and sixteenth centuries, and even Italian artists have recorded this feature.

(6) (North wall, east section.) **The Samaritan paying the two pence to the host** (Pl. XL).—The left side of this picture is the only part readable. The Good Samaritan stands in the left foreground and with the right hand is placing the second penny on a tablet for the receiving of money known as a nail or tome¹ and on which one penny already lies, while the innkeeper, who has emerged from the inn, looks on. The Samaritan is dressed for riding in a cloak which falls down his back, over a long, fringed, skirted doublet girded at the waist by a sword belt; trunks and spurs are attached to his ankles. He wears a head-piece similar to that shown in the former representations. The innkeeper, whose face is in profile, is bearded like the horseman, and is looking down at the nail. His head is hooded by a linen covering, which falls down over the shoulders and is held in place by a turban. Behind the Samaritan and looking over his right shoulder is his mount, which seems to be taking an intelligent interest in the proceedings. The background of the picture is obliterated.

THE INDIVIDUAL SUBJECTS. (7) (South wall, east of window.) **St Jerome in the Wilderness** (Pl. XLI).—Jerome, as saint and penitent, is shown kneeling on the left knee, with the right foot, which is bare, in advance. He is looking upwards at a crucifix and beating his breast with a stone. The left hand rests on a human skull, the emblem of mortality, which lies on a bank and is balanced against the base of the crucifix. The saint has a short flowing beard and his hair is matted; he

¹ *The Field*, 11th Jan. 1941, p. 44; *ibid.*, 22nd Feb. 1941, p. 247.

is dressed in a long, loose-flowing and wide-sleeved garment over an open-necked shirt. The forearms are bare, the sleeves being rolled up at the elbows. The crucifix on which the Saviour hangs is long shafted and of T form. Set on the top of the cross arm is the label bearing the initials I.N.R.I. At the right-hand bottom corner, lying on the ground in front of the saint, is a double-corded and knobbed object—this might be a scourge, but is more likely to represent the tasselled cord or chin adjustment of the wide-rimmed cardinal's hat so frequently introduced in compositions of the saint in the wilderness or in the study. The top of the picture is enclosed by an arch over which is the label bearing the inscription SANCTE JERONEMUS. The label is adorned with a tasselled and sleeved ribbon.

(8) (West wall, north section.) **St Mary Magdalene in Penance.**—This is a counterpart of the picture of St Jerome, inasmuch as the representations are symbolical of Christian Penitence. The Magdalene is shown as an elderly women, far from emaciated in appearance, dressed in a ragged garment. She is seated, and rests her head in the right hand, the elbow being supported on a round table on which are a human skull and an hour-glass. The left arm is drawn across the waist, and the hand holds the alabaster box of ointment, which takes the form of a small flat heart-shaped, closed receptacle. The head of the saint is nimbed, and her hair falls in long dishevelled tresses. To the right is a bouquet of flowers—floral tributes cast by angel figures are not infrequent in representations of St Mary Magdalene in the Wilderness. Above the table is the outline of a label. The picture is set over a doorway.

(9) (North wall, west section.) **Lucretia in the attitude of stabbing herself.**¹—The figure is that of a young person with long flowing curly tresses waving downwards in a dishevelled manner. A loose draping hangs on the left shoulder, envelops part of the forearm, and falls down the back. A fold of the covering is carried round the waist, expanding and partially covering the legs. The right arm is uplifted, the hand forcing the weapon downwards, and the other hand guides the point into the right breast. The selection of the subject can thus be explained: the Roman matron represented was a lady of distinguished virtues who destroyed herself in penance, consequently her portrayal was symbolic of the defence of virtue. Lucretia has been frequently portrayed by German and other artists of the sixteenth century.

For the most part the architectural framework represents an arcading of four-centred arches carried on columns. The columns, with moulded bases, stand on pedestals rising from the lower margin of the dado band.

¹ In 1552 Arran purchased three English books, viz. *Parraphrasis upon the Evangelists*, and *New Testament*, and Hopper upon the *Commandments*. The last-mentioned book was written by John Hopper, D.D., Bishop of Gloucester and Worcester. In it the author extols the virtues of Lucretia and St Jerome. Hopper suffered martyrdom for the Reformed Faith.

They have caps of Corinthian character but of a style greatly removed from that of the pure classic form. Each spandril, shown as built of ashlar masonry, contains a small round window in which is framed a human head. A large plain label, which formerly contained a descriptive stanza, hangs on the central column in the west wall, and another such label rests against the architectural foreground in the last scene of "The Good Samaritan."

The dado-band, like the frieze, is an arabesque setting. On the east wall are traces of an inscription label, a wreath containing a blind-folded figure in a flowing gown (Pl. XXXVI), and a floral swag. On the south wall are medallion-portrait roundels supported by cupidesque figures with curling acanthus and fruity tails (Pls. XXXVII, XLI). On the west wall are compositions of vases, children, floating ribbons, floral sprays, and bunches of fruit; and on the remaining wall there is slight evidence of similar compositions.

The base of the dado is slightly elevated from the floor, and is set off as an arcade (Pl. XXXVII, bottom) supported on massive square pillars which underlie the upper colonnade. The piers are enriched with detail, and each arched panel contains a central urn, out of which grows a luxuriant design of scrolled conventional leafage, while above and on the centre is a cherub's head.

At the window ingoes the decorations take the form of foliaceous sprays, scrolls, and human masks. The painted outlines of these patterns are not confined to the plaster surface but are carried over the naked stonework. A set pattern is to be seen on the soffit of the window in the east wall.

NORTH OR ARBOUR ROOM.

In this wagon-vaulted chamber there is decoration of two periods, namely the work of the Governor's time, painted on the primary coating of plaster and on the stone margins, and that of the early seventeenth century, painted directly over the older work. In the treatment for preservation, consideration had to be given to what would leave the best possible document of both periods. To achieve this, the later plaster was carefully removed and the later paint on certain parts of the vault and the wall surfaces floated off to make the older and underlying decoration appear in places as if seen through a veil. The result is that the lower parts of the wall surfaces and the eastern half of the ceiling, including the central armorial panel, represent the later work and can be read as a unit.

As for the mid-sixteenth century decoration, the artist had to devise a scheme suitable for a room of this particular nature and in such a manner as to render his theme in terms best suited to his craft. This he achieved

by producing a bold and strong dado and dado-band of big-scale foliaceous detail. Growing up the wall faces from this screen and extending over the vault he wrought a bower of curling and coiling stem-work, embellished and embroidered with a great variety of leaves and blossoms. This screen swept its curvilinear outlines around pictorial and heraldic roundels, and within its free spaces were set, as if by chance, birds, animals, and heraldic beasts. Floating amid this pictured pleasance are inscribed ribbons and labels, curled at the ends, which bear descriptive stanzas.

The Picture roundels were disposed in the following manner—the largest high up on the south wall, one on either side of the window at the north end, and two on each side on the vault set just above the springer line. Two heraldic roundels are set on the ceiling.

(1) (South Wall.) **Samson and Delilah**¹ (Pl. XLII).—The composition represents Delilah as a young woman, seated and holding in her hands the scissors and the shorn hair. Samson is asleep at her feet, with his body resting against her knees; his legs are drawn up in an uncomfortable manner, the head lies over to the right, and in front of it is extended the right arm and hand. Delilah wears a reticulated coif, which has a frontal border, and her falling tresses outline her bare neck. She is dressed in a low-necked corsage which has *boffants* at the elbows and shoulders. Samson is shown in a jerkin and trunks. On the left a flight of steps leads to an entrance, and without stand two Philistine warriors armed with shields and spears and in the attitude of conversation. The picture is shaded in grey tones, and the enclosing frame is ornamented with interlaced ribbons coloured red, the marginal rings being in ochre.

(2) (West wall, south half.) **The Temptation of St Anthony**.—The picture, which is badly damaged, shows in the left lower quadrant the bearded, naked, aged saint reclining, his hands joined and uplifted in prayer. Behind the saint stands the devil, and to the right are two chests, of which the foremost stands open and is apparently full of coins. Behind these boxes appear to be traces of the legs of a nude female.

(3) (North wall, west of window.) **The Sacrifice of Isaac**² (Pl. XLIII).—In the representation of this scene, Abraham is shown holding the kneeling figure of his son by the left shoulder, and brandishing a sword. Out of the clouds appears an angel, who grasps the sword blade and, with the left hand extended, admonishes Abraham. Below the roundel is the label inscribed with the appropriate verse set in four lines, the words "to mak," "Soune Isaak," [ye] "Lordis Com[and]," "Thy hand" are legible.

(4) (North wall, east of window.) **David and Bath-Sheba**³ (Pl. XLIII).—David robed, crowned, and playing a harp is seen standing on the roof of the king's house. He is looking down at Bath-Sheba who is bathing. The messenger, dressed in a slashed doublet, is approaching the naked

¹ Judges, chap. 16, ver. 19.

² Genesis, chap. 22, ver. 11.

³ 2 Samuel, chap. 2, ver. 2.

woman. In the background a ridge is crested by a coppice. The inscription in the underlying label has been obliterated. In this and the previous subject the sky is tinted red.

(5) (Ceiling, south section.) **The arms of James, 2nd Earl of Arran** (Pls. XLIV, XLV). The quartered coat ensigned with a ducal coronet for Châtelherault and with the collar of the cockle, with the jewel of St Michael attached, is surrounded by a circular frame ornamented with alternating S curves and half flower heads. The Michael hangs over this bordering. Below the roundel is a single supporter, the Hamilton antelope—shown couched, collared, and chained.

(6) (Ceiling, north section.) **The arms of Margaret Douglas, Countess of Arran** (Pl. XLIV) ensigned with a coronet as above and with a *cordelière* of four knots—the cinquefoil (for Arran) and the mullet (for Douglas) appear on the decorated band of the circular frame. The underlying single wodehouse supporter is obliterated.

The "Arbour" Decorations (Pl. XLV). (7) (South wall.)—Twin stems rise from the centre of the dado-band. Each stem sweeps outwards and upwards enclosing the picture roundel in a number of circular sprays clothed in leafy lambrequin and having blossom like "collars" with terminals suggestive of marigold, rose, lily, and bell-flower. Amongst the display are to be seen a small-headed greyhound of the type portrayed in late mediæval times, coursing towards a stag, which stands with head erect turned in the opposite direction (Pl. XLVI); a fluttering dove poised before a human face protrudes from a bell-flower, and higher up the wall are a squirrel, a rabbit, a pheasant feeding, and a bird perched on a stem.

(8) (North wall.) The narrow spaces of the main wall on either side of the recessed window are of similar treatment, and, as there is a decorated band margining the ingo, the space left is mostly taken up by the circular picture panels and the underlying scroll. The "Arbour" decoration in each wall space is therefore not extensive and rises from a single stem.

(9) (West and east walls.) The decoration on the side walls has been arranged in a manner similar to that on the south wall, but with the difference that there is a pair of twin stems instead of one on each wall which convolve over the walls and ceiling and circumscribe the picture and the heraldic roundels until they reach each other at places in the medial line of the vault. An owl and a galloping unicorn are set aloft; farther down in the convolution a rabbit emerges from a bell-flower and faces a small dog, which is shown coming out of another blossom (Pl. XLIV).

The artist, when emphasizing the main stem-work, has in some places only drawn the one outline of the stem in black; this he has "hatched" with short in-lines and then formed the thickness of the stem with ochre. Closely arranged and short in-lines are formed in the foliage where relieving

is necessary, and they also appear drawn across the medial lines of foliaceous work.

The north window ingoes are decorated with big free flowing stem and leaf work extending upwards in continuous S curves, and on the lintel was a display of the Douglas mullets.

Set between border lines the dado-band is embellished with continuous mantling of sea-weed character, resembling the leaves of Irish moss, which folds over and under a median rod. This large scale form of foliaceous work has been used for the dado decoration. Excellent work of this nature adorned the upper part of the west wall of the south room on the upper floor, but was destroyed when the building was dismantled in 1936.

Inscriptions.—Unfortunately, the inscriptions on the scrolls are for the most part obliterated in places, but from what remains readable they appear to have been proverbial sayings and spiritual exhortations. The late Gothic script on ribbons on the south wall (Pl. XLV) reads as follows:—

Vt. faicht. VAZALIE. IS. YAIZ. NA. honeſty.

Without faith verily is there no honesty.

pz/ yLozd. doeth Pr[ay] [the] Lord doeth.

And him onely. ſazve. D. All the
ſtzynght. And. my.

And him only serve with all thy strength and might.

On the west wall:

Beheve. . me. do. ſo. I. ſay. I.

Believe [upon] me.

Do so I say I . . .

HAYE MEZCE of me. DAY AND nyct I

Have mercy on me.

Day and night I . . .

and "TREBIL AND" are the only words legible in a long legend on the west wall. The hand that printed all the script throughout the work may not have been that of the artist who drew the cartoons, for he could hardly have made the mistake of confusing the identities of the Levite and the Priest in the second picture of the Parable story.

SEVENTEENTH CENTURY DECORATIONS.

Early in the seventeenth century the lower decorated surfaces were painted over to represent oak wainscot (Pl. XLVII). This imitation, three panels in height, with a frieze-board and cornice, rises to the level of the springer-line of the wagon vault. The decorations on the upper parts of the end walls and on the ceiling were also painted over to resemble enriched plaster work. Later on, near the close of the century, a final alteration was effected. Memel wainscot was introduced, and the painted work on the ceiling and upper parts of the end walls was obliterated by a thick coat of plaster. To provide "grounds" for the woodwork, horizontal channels were cut at intervals in the wall-faces, thus destroying parts of the mural decorations. A similar mutilation took place on the south wall of the Parable Room.

The imitation panelling consists of a cornice representing a cyma-recta moulding enriched with an acanthus ornament, a frieze taking the form of a plain band punctuated over each style of the panelling with a small block or armorial; the heraldic emblems being set alternately. The blocks are drawn and shaded to give the impression of a faceted projection, and the small shields portray either the Arran galley or the Cunningham shake-fork. These decorative notes are further enhanced by frames of small scale strap-work in imitation of marquetry. Jacobean patterns of this strap-work order occupy the central area of each panel.

The ceiling decoration (Pl. XLIV, right) of imitative ribs set in a pattern with painted enrichments in the panels is an imitation of the type of plaster ceiling favoured in Scotland at that time. The centre feature is a large oval, supported at the cardinal points by ribs. The rib extending from each side of the oval branches into two arms, which find their base on a demi-rib resting on the wainscot. A horizontal rib set between the oval and the cornice is linked by a roundel to each of the outlying transverse ribs. These circular panels, originally four in number, contained alternately the galley and the shake-fork. A wall-rib terminates the ceiling at each end, and the wall-spaces enclosed by the arch were decorated

in a similar manner. The main band of each rib was painted red and enriched with a scroll of leaf-and-stem ornament in white. Marginal lines, of different colours, suggest the rib mouldings. Within the central oval of the ceiling are the achievement and supporters of James, 2nd Marquess of Hamilton, set on a dark grey background (Pl. XLIV, centre). The oval quartered shield (Hamilton and Arran) is enclosed within the Order of the Garter; the supporting antelopes stand on a strapwork frame of an underlying label. Over the coronet is the crest—an oak fructed and penetrated transversely in the main stem by a frame-saw. The motto "SAW THROUGH" in Roman lettering appears on scrolls on either side of the crest. On the dexter side of the coronet is the letter I for James, and on the sinister the letter M. and H. conjoined, for Marquess of Hamilton. Each of the large spaces within the rib-pattern is ornamented with a spirited and delightful representation of an amorino in the Italianate style adopted by Flemish painters. The babe is entwined in light floating drapery and flying in space, scattering fruit, blossom, and floral sprays through the air.

On the soffit of the east window is a large grey panel, on which is set the achievement of the 2nd Marchioness, Anne Cunningham, daughter of James, Earl of Glencairn. The shield charged with a "shake-fork" is set on a cartouche of strap-work design. The supporters are rabbits (cunnings). The shield is ensigned with a coronet, from which rises the crest, a unicorn's head couped, on either side of which are scrolls bearing the motto "FORK OVER," and the initials M. | A. H. are also present. The side enrichments outside the panel represent daffodils and fruit-bearing sprays of apple, pear, and cherry trees. In the space at the window lintel are two sprightly cupid figures, poised amidst falling blossoms, and holding from suspended cords a plaque, on which is displayed the Marchioness's cypher set under a coronet. A corresponding design adorned the similar space above the north window. The end-wall surfaces above the painted panelling were treated like the ceiling with panel patterns and amorini. It was found in removing the late seventeenth century plaster that the designs, owing to the nature of the pigments, had been fortuitously transferred to the inner face of the plaster, and sections removed from the walls, showing the decorations in reverse, can now be seen in the exhibition room on the upper floor.

The seventeenth century mural artist seems to have applied his decorations on a prepared surface washed over the earlier painting. He used a greater range of colours than his predecessor, as blue, green, umber, light red, and flesh tints appear in his compositions. Further, he did not rely, as the cartoon artist did, on the use of black as a medium for outlining his designs. In the buffet recess he has left a fortuitous sketch of a small nude female figure seated and spinning thread by hand with distaff and spindle. This spinster is drawn in a red line and coloured with flesh tints.

These later decorations can be assigned to a date between 1621, when the 2nd Marquess was made a Knight of the Garter, and 1624, the year of his death in London at Whitehall. The exact date of the earlier work, however, may be difficult to confine within such certain limits. In character and style the cartoons, the costumes, and the script on the scrolls and labels are definitely those of the overlap period between the second and the third quarters of the sixteenth century. The work seems to have been accomplished between the years 1553 and 1565 and not after 1570. The Earl of Arran died in January 1574-75, and the immediate years before his death imposed conditions that were far from conducive to any degree of artistic enterprise on his part.

An entry in the Lord High Treasurer's accounts for the year 1553 suggests a solution of the problem. "Item, to the masonis on Kynnele, in drinksylver, at the laying of the ground stanes of the palice of Kynnele." ¹ Apparently this "founding pint" was supplied at the start of the building of the wing which contains the painted rooms. By the following year the palace would be completed, and the painter at work on the mural decorations. That same year, 1554, the Governor resigned in favour of the Queen-Mother, and the contents of the national purse were no longer his to command. The cartoons have the appearance of never having been brought to completion, and it may well be surmised that the year 1554 marks the most likely date of the work.

In the Lord High Treasurer's accounts for 1551-52, the many items for payment to painters and for paint indicate that it was all in connection with the Governor's Palace at Hamilton, but no entry in any subsequent year referable to Kinneil concerns painting, although building material is mentioned.

Contemporary records show that the following painters, Sir John Kilgour, Andrew Watson, Archibald Rowle, Andrew Michelson, Robert Galbraith, and Walter Bynning, were employed from time to time by the Governor of Scotland. From various entries in the accounts Bynning seems to have been the painter most patronised. After 1554 this man worked for the Queen-Regent. In May 1549, during Arran's governorship, Bynning was under a financial obligation to one "Gillian, the Franche paynter." In other documents of that year this foreigner is called a Dutchman, but no doubt he actually was a Franco-Fleming. It is of interest to note that a man of this name came to Scotland in 1539 to be *tapissier* to King James V. Although foreign artists obtained employment in Scotland under royal and ecclesiastical patronage, it should not be forgotten that continental records indicate that Scottish painters were sometimes employed in France and Flanders and that some of them were members of guilds in these countries. Such a man returning to his native

¹ *Accts. Lord High Treasurer*, vol. x. p. 207.

land would very naturally influence and stimulate the plastic and pictorial art of the country. If the Gillian, mentioned in connection with Walter Bynning's debt, and the *tapissier* were one and the same man, and provided he was still resident in Scotland in 1554, he might well have been the author of the cartoons at Kinneil—whoever that artist was, he had been trained on the Continent as a designer of tapestries.

The painted work at Kinneil is not confined to the two rooms in the guardianship of the Ministry of Works and Buildings; elsewhere, in the ruined part of the building, are indications of sixteenth century work underlying later coatings of wall plaster.

Cartoons such as those in the Parable Room suggest to the mind that Governor Arran may have had in view a scheme to furnish tapestries for the principal apartments of his palace, and that he had commissioned an artist to draw out cartoons to full size on the walls so that he might judge for himself their general effect. Although the subject of the "Good Samaritan" is not apparently one which appealed to the producers of tapestries, yet it was a theme which might well have occurred to the imagination of the Governor, who had leanings towards the Reformation party in Scotland. On the other hand, it is difficult to imagine how furnishings of tapestry could be comfortably applied to the wagon-vaulted room—true, such hangings were canvas-backed and provided with hanging cleeks, but it would have necessitated many such metal appliances to have held the tapestry sections in a comfortable manner to the underside of the vault; for by such means only could the covering of the ceiling be effectively accomplished.

Reference to contemporary heraldic drawing in Sir David Lindsay of the Mount's *The Book and Register of Arms*, produced in 1542, shows that the herald painter employed used in his designs for label embellishments architectural and ornamental motifs of the same character and spirit as did the Kinneil cartoonist.

Not only have the Kinneil paintings been brought back to life to constitute an interesting extension to the collections of early Scottish paintings in the national galleries, but, in saving them from oblivion, the appropriate atmosphere of their period has been captured to such an extent that the visitor can almost visualise the figure of a man of gentle nature standing in the Parable Room, pensively surveying the symbols of Christian penitence, self-denial, and self-abasement—that man none other than the Most High, Puissant, and Noble Prince, James, Duc de Châtellerauld, Earl of Arran, Knight of St Michael, and at one time the Protector and Governor of the Realm of Scotland.

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NOTES.

A TOGGLE AND AN IVORY BUCKLE RECENTLY DISCOVERED AT
BRACKMONT MILL, NEAR LEUCHARS.

In a communication to this Society in March 1937 the late Dr J. B. Mears described some "Urn Burials of the Bronze Age at Brackmont Mill, Leuchars" (*Proc. Soc. Ant. Scot.*, vol. lxxi. pp. 252-78). He gave an account of the discovery at that site of some thirteen cinerary urns and incense cups, described the specimens and their contents, and discussed some of the problems raised.

Dr Mears had very closely supervised the excavation of the site, and his death has been a grievous loss to local archaeology.

Since these discoveries were made removal of sand at the site has continued.

Fortunately, Mr Lewis H. Spence, the proprietor, had worked with Dr Mears and become imbued with some of Dr Mears's interest. He has watched very carefully the excavation and has noted and safeguarded the urns and any features of interest exposed.

A few yards from the site of the former finds, within recent months a number of additional urns or portions of urns have been disclosed. Under several of the urns lay small heaps of incinerated bones. These were collected by Mr Spence and sent to me at the University.

The objects described here came from under Urn No. 9. Mr Spence's notes regarding it were that "the whole urn was found; it was of medium size, 14 inches in height, 4 inches wide at the top, the maximum width 13 inches, the top 18 inches below the surface, and the interior of the urn was black." It is in fact an Overhanging Rim Urn with concave neck, belonging to phase III in Grimes' series.

The fragments lying under this urn included teeth, and portions of the skull and limb bones of an adult, probably a male, and among them two objects of unusual interest—one a "toggle," the other what may be termed a buckle.

The "toggle" (Pl. XLVIII, 1, *b*) was very like one found at Seggiecrook (Aberdeenshire), described by J. Graham Callander (*Proc. Soc. Ant. Scot.*, vol. lxiv. p. 31), but was smaller, measuring only 18 mm. in length and 8 mm. in width at its widest, while the Seggiecrook specimen was "1 inch long and $\frac{11}{16}$ ths in diameter at each end." The central part was D shaped in outline, one side flattened, and perforated at its middle by a circular hole 4 mm. in width. The annular grooves at each end were deep and their walls smooth. It was of bone, and might well have been formed from the hollow bone of a bird or small animal. It weighed 1.6 grammes.

The other larger object (Pl. XLVIII, 1, *a* and fig. 1) was an oblong plate of yellowish-white bone-like material measuring 47 mm. in length, 30 mm. in width, and 6 mm. in thickness, from one surface of which projected a flat hook.

Like the bone fragments among which it lay, it had been incinerated, and there were fine cracks and chips on the surfaces and edges, and a strip of material had partly split off from one surface.

Near the corners were small holes, whose arrangement will be fully described later. It weighed 16.5 grammes.

The nature and use of this object are uncertain, but it had apparently been attached to a garment and served as a buckle.

The plate was almost flat and the hook projected from one surface near one end. At its root the hook was 1 cm. wide and 5 mm. thick. It rose above the

surface for 6 mm., bent sharply on itself, and was prolonged as a flat tongue-shaped process 16 mm. long, narrowing to 7 mm. in width (fig. 1, *a*).

Its free end was slightly cracked by the incineration, but it could be determined that the interval between the end of the hook and the plate was rather less than 2 mm. The upper surface of the hook was beautifully fluted, with three shallow parallel grooves separated by low rounded ridges (fig. 1, *b*).

The hook had been cut out in relief from the same material as that which composed the plate.

The opposite side of the plate was slightly convex from side to side. A central strip 1 cm. wide had partly split off from the rest of the plate (fig. 1).

Holes and Tunnels in the Plate (fig. 1, *c*).—Near each corner holes had been drilled (Pl. XLVIII, *a*, top).

The arrangement of the holes was the same at each corner and was quite elaborate. At one corner slight chipping had broken away portions of the holes.

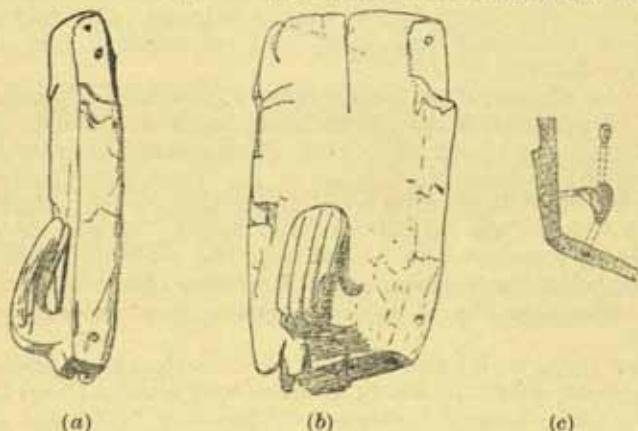


Fig. 1. The ivory buckle: *a*, in profile; *b*, showing fluting on the hook; *c*, diagram of the holes and tunnels at each corner. ($\times 2$.)

From the central small pit the tunnels, shown by dotted lines, pass to the end, the edge, and reopen on the same surface as the pit.

There were no holes on the surface which carried the hook, but on the other surface, near each corner, 5 mm. from the end and 3 mm. from the side, was a small oval pit, some 3 mm. by 2 mm. in size. In the floor of each were three very small openings, each leading into a short tunnel; one tunnel led to the flat surface of the end, another to the side, while the third bored into the plate and opened on the same surface 5 mm. away. These tunnels were cylindrical, from 1 to 2 mm. in diameter, and the edges of the openings were in some cases bevelled off. Another opening on the same surface at the middle of the end next the hook opened on the marginal surface. To bore these through ivory with the implements of flint or possibly bronze such as were available at that period was a masterpiece of craftsmanship, for the little tunnels which opened at each end on the same surface of the plate were not straight but slightly curved.

The only purpose these tunnels could have served would be that of the holes in a button, for threads or fine cords attaching the buckle to a garment. In this case the cord would consist of three strands, one passing through each tunnel.

I have to thank Mr R. B. K. Stevenson, to whom I showed the specimen, for giving me the reference to the description of a somewhat similar object figured and described by Stuart Piggott in his account of the Early Bronze Age in Wessex (*Proc. of the Prehistoric Society*, N.S., 4, 1938).

In the excavation of the "Bush Barrow," Normanton, Wilts, a number of objects were discovered including a bronze axe, two very large bronze daggers, one with gold nails on the haft, two quadrangular gold plates, and what is described as a "gold scabbard-mounting." This was a gold plate, quadrangular, and almost square, slightly over 3 inches in length, and from one surface projected a hook very similar in its form and proportions to the hook of this specimen in ivory.

Comparison of his figures of the gold plate with this ivory buckle shows the close similarity of design of the two specimens.

The worker who made one must have been acquainted with the design of the other.

The Material of the Buckle.—The weight and the close texture of the material suggested to me that it might not be bone but ivory. In order to settle the question, some small fragments were removed from different parts of the plate, cleared in xylol and examined microscopically. Similar fragments of the toggle were treated in the same way.

In spite of their age and the incineration which the materials had undergone, it was possible clearly to make out their microscopical characters.

The fragments of the toggle showed the features characteristic of bone—Haversian canals and lacunæ. Those from the buckle were quite different and showed fine wavy lines, the dentinal tubules characteristic of dentine (ivory).

The microscopical characters did not disclose the source of the ivory—whether the tooth of a whale or the tusk of a walrus, or from some other mammal. The planes of splitting of the central strip from the rest of the plate threw some light upon this. These planes followed natural lines of cleavage between layers of the material and indicated that the general direction of the ivory was slightly curved, like the curve of a tooth rather than of a straight tusk.

In conclusion I have to express my thanks to Mr Spence for all his care and assistance, and to Miss M. H. Kidston, B.Sc., for her help in examining the remains among which these two objects were found and for her very careful and accurate drawings of the buckle (fig. 1).

DAVID WATERSTON, M.D., F.S.A.Scot.

2. A HALBERD OF COPPER FROM FIFE.

This specimen was found on the slopes of the Fife Lomonds, not far from Strathmiglo (Pl. XLVIII, 2).

It is of typical shape, measuring 26.5 cm. in length, 9 cm. in width at the wider end, and it weighs 340 grammes.

The end of the butt (wider end) is curved, and perforated near the edge by five circular rivet holes. Two of these holes are complete, and measure 9 mm. across. The margins of the other three holes are incomplete, portions of the thin margin having perished by corrosion.

The edges of the weapon are sharp and undulating. From the haft it tapers to a rounded point. There is a central midrib, beginning a short

distance from the extremity of the haft where it is 35 mm. wide, and almost 8 mm. in thickness, tapering gradually in width and thickness to the point.

The metal shows a fine rather patchy green patina.

My friend, Dr Dewar, of the Chemistry Department of the United College of the University, kindly applied some tests to determine the composition of the metal. It proved to be not bronze, but copper, the cacoethelin test showing that there was not a trace of tin in its composition.

Mr Edwards, the Director of the Museum, has informed me that twenty-three halberds have been recorded from Scotland—this, therefore, is the twenty-fourth specimen—and that it is of ORiordain's type 6. As most of them have not so far been tested chemically it is not certain how many of these are bronze and how many of copper.

Many specimens of copper halberds of similar form have been discovered in Ireland, but comparatively few in Scotland.

DAVID WATERSTON, M.D., F.S.A.Scot.

3. A HOARD OF BRONZE AGE HALBERDS FROM AUCHINGOUL, INVERKEITHNY, BANFFSHIRE.

In the autumn of 1939 a number of Bronze Age halberds were accidentally turned up by the plough at the Mains of Auchingoul, in the parish of Inverkeithny, Banffshire. The site of the find was in a field, about a quarter of a mile south-east of the steading, and on the low terrace of the Deveron, about 15 feet above the stream. As far as the farmer can remember the number of halberds found was seven or eight. They were picked up and placed on the wall of a fowl-house, from which they gradually disappeared until only two were left.

This important find was made known to us in December 1940, when a visitor to the farm brought the two remaining halberds to the Museum for inspection. In August 1941, while Professor Childe was on a visit farther north, he very kindly volunteered to visit the farm on his way back and to make enquiries concerning the details of the find. It was indeed fortunate that he did so, for, with the assistance of the farmer, Mr J. A. Smith, other two of the weapons were found, one buried in the muck of the fowl-house and the other being used as an earth for a wireless set.

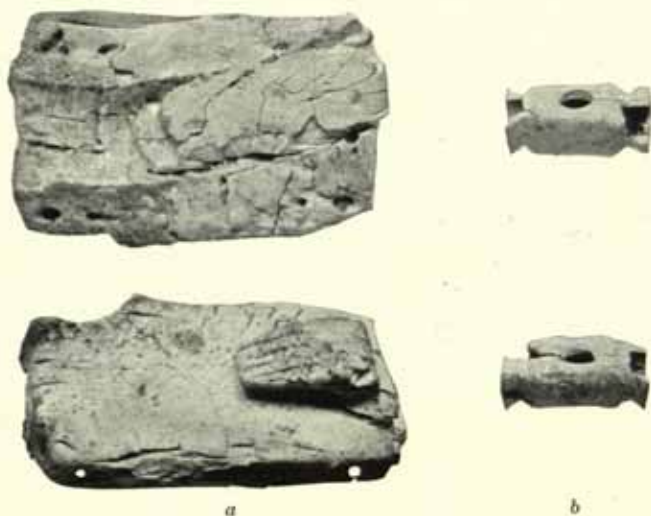
A detailed description of each of the halberds (Pl. XLIX) is as follows:—

No. 1 is $10\frac{1}{8}$ inches long and $3\frac{1}{2}$ inches broad at the base, which is rounded. The greatest width is $3\frac{1}{4}$ inches. It has a well-developed midrib, $1\frac{1}{8}$ inch in breadth at the top, which gradually tapers to a rounded point. One side of the weapon is straight, the other having only a slight curvature.

No. 2 measures $10\frac{1}{8}$ inches in length and is $4\frac{1}{8}$ inches wide at the base. The midrib is well developed and measures $1\frac{3}{8}$ inch in breadth at the top. There are five rivet holes, each being about $\frac{1}{4}$ inch in diameter. One side of the weapon is straight and the other is slightly curved.

No. 3 is 11 inches long and $3\frac{1}{8}$ inches broad at the base, the greatest width being $3\frac{1}{4}$ inches. The midrib is $1\frac{1}{8}$ inch in breadth at the top and gradually tapers to a point. One edge of the blade is straight, the other slightly curved.

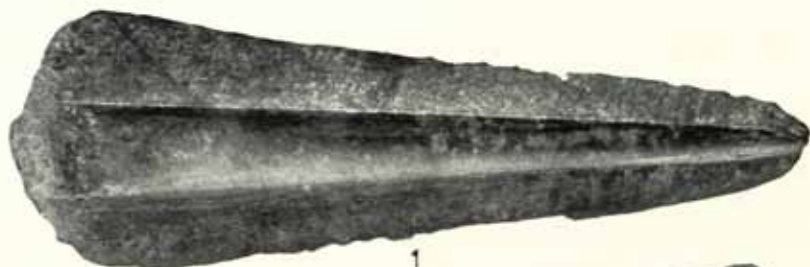
No. 4 measures $11\frac{1}{2}$ inches in length, one side of the base is a little broken, but it was probably $3\frac{3}{8}$ inches in breadth when complete. The midrib, which is strongly developed, is ornamented by three ribs, which gradually converge as they approach the point. There are two grooves on either side of the blade,



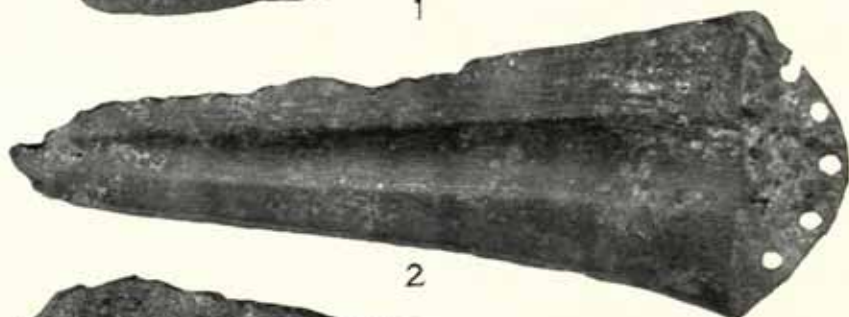
1. (a) Ivory Buckle and (b) Bone Toggle from Brackmont Mill (natural size).



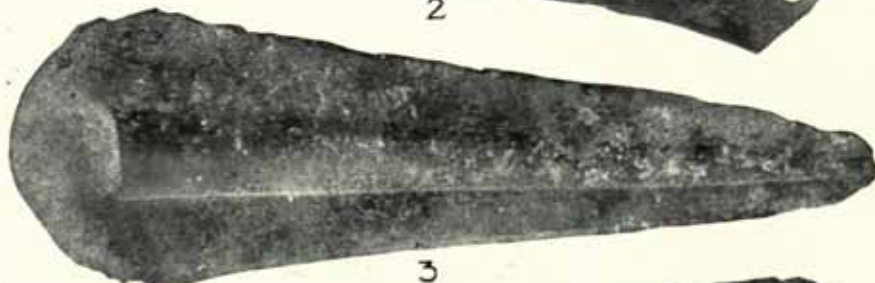
2. Halberd from Strathmiglo (nearly $\frac{2}{3}$).



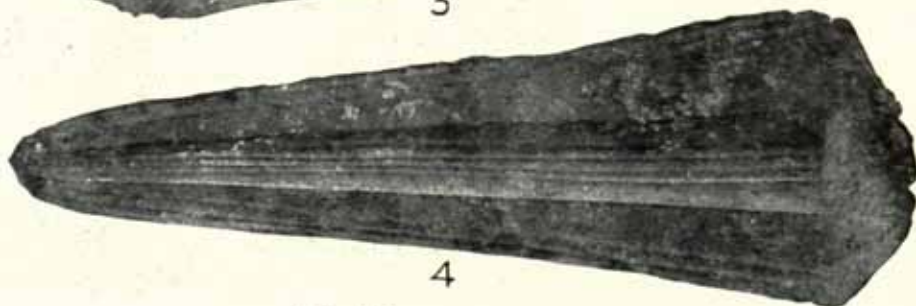
1



2



3



4

Halberds from Auchingoul. ($\frac{1}{2}$.)



1. Fragments of Urns from Balrownie.



2. Niche head from Sheriffhall.



1. Cairngryfe: Outer face of rampart.



2. Inner face of rampart showing post holes.



1



2



3



4

Relics from Cairngryfe.

running parallel with the edges, one of which is straight and the other slightly curved.

Halberd No. 2 was very kindly tested for tin by Dr C. C. Miller of the Chemistry Department, University of Edinburgh, with negative results. Hence it may be concluded that the halberds from Auchingoul, like that from Fife described in the previous note, are not made from an artificial tin bronze but from "unalloyed" copper.

All four halberds are of ORIORDAIN'S type 6,¹ and it is interesting to note that other two of this type have recently been recorded in the *Proceedings*, one from Fife,² which is in the museum at St Andrews University, and one from Inverness-shire,³ now in the National Museum of Antiquities of Scotland.

The four halberds are well patinated; only the one with the rivet holes may have been in use, the other three having still to be bored before they could be attached to the shafts.

A. J. H. EDWARDS,
Director of the Museum.

4. TWO CINERARY URNS FOUND AT BALROWNIE, BRECHIN, ANGUS.

In the middle of September 1940 the finding of two cinerary urns on the estate of Balnamoon, Angus, was reported to the Society by W. B. Carnegie-Arbuthnott, Esq., F.S.A., who enclosed an account of the discovery which has been freely drawn upon in the following note, and who subsequently very generously presented the urns and their contents to the National Museum. I visited the site on 17th September along with the Factor, Mr T. M. Wood, to whose help I am greatly indebted.

The site of the discovery is on a natural knoll—the Knap of Balrownie—at the end of a gravel ridge, 600 yards west of the Mill of Balrownie, about 4 miles from Brechin. The Cruick Water flows 60 yards to the south. To the north one can look across to the Caterthuns. There are no recognisable traces of a tumulus.

Part of the knoll has been dug away by a gravel pit, and as a result the side of an urn only just below the turf was exposed in the mouth of a rabbit hole about the middle of the knoll. Mr Carnegie-Arbuthnott carefully removed the broken vessel, of enlarged food-vessel type, which was mouth downwards. It was full, the contents consisting largely of bone fragments with a good deal of fine matter and earth. The latter could have got in through the broken bottom, which had been completely ploughed away. The urn had apparently been simply deposited in the ground; there were no stones which might have served as cover or sides of the hole.⁴

Seven feet away to the south-west, and at a slightly lower level, a second urn was discovered. Part of it had been disturbed and sherds and fragments of bone were lying about. After some investigation Mr Carnegie-Arbuthnott covered it over again pending further examination. Along with Mr Wood I exposed it completely and removed it. It was also mouth-downwards, and of the same type. Although broken near the shoulder, pieces of the sides and

¹ ORIORDAIN, "The Halberd in Bronze Age Europe," *Archæologia*, vol. lxxxvi. pp. 195-321.

² See preceding Note.

³ *Proc. Soc. Ant. Scot.*, vol. lxxiv. p. 149, pl. lvi.

⁴ Mr Carnegie-Arbuthnott noted a compacted even surface at the same level as and extending close to the urn, which he cleared of overlying soil for several square feet out into the gravel pit. I am not, however, convinced of its antiquity.

a fragment of the base had fallen in on the cremated remains, which lay in a clean white layer across the mouth of the urn. The vessel would thus appear

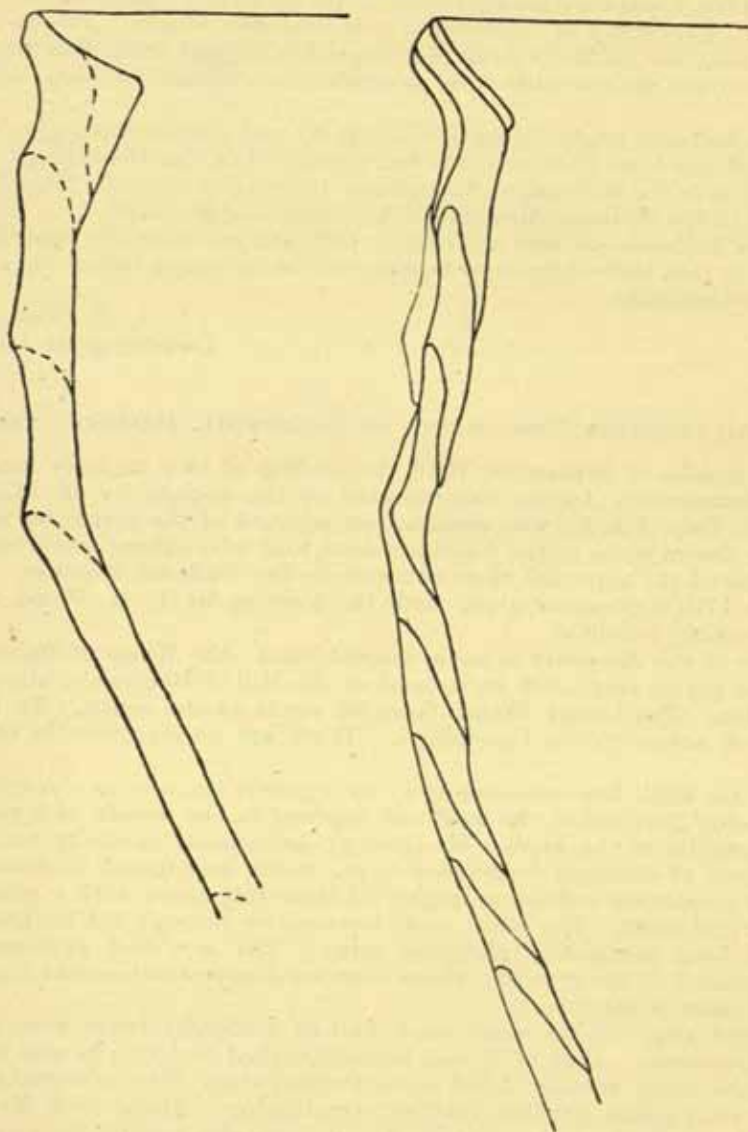


Fig. 1. Urns 1 and 2 from Balrownie (1:2).

to have been to a large part empty, with a cover over the mouth, at the time of interment. What remained of the hole in which it had been placed was fairly steep sided, with a flat bottom only about $1\frac{1}{2}$ inch greater in diameter than the urn.

Professor Alex. Low has reported that each urn contained the thoroughly cremated remains of an adult human skeleton:

Burial I. Identified—numerous pieces of flat bones of skull—parietal, occipital, frontal; and of the face, a left malar bone and part of upper jaw; fragmentary vertebrae and ribs; pieces of humerus and ulna; fragments of femur and tibia, also a patella and talus. Weight of cremated bone 2 lbs. 1 oz.

Burial II. Identified—numerous pieces of flat bones of skull, with part of a right petrous bone and several teeth; fragmentary vertebrae and ribs; pieces of humerus, radius, ulna and phalanges of hand; fragments of pelvis and warped pieces of lower limb bones. Weight of cremated bone 2 lbs. 3 oz.

In each case a few of the bones bear green stains, which indicate that a small object or objects of bronze or copper had accompanied each burial.

The first urn is of a soft friable texture and has a large amount of grit in the clay. The surface, mostly reddish or dull buff on the outside and grey or black on the inside, is slightly sandy. The rim diameter is 11 inches, that at the shoulder 10½ inches. Above the shoulder the neck takes the form of three grooves. Each of these, as also the broad interior bevel of the rim, is decorated with two rows of oblique impressed-string "maggots" forming a chevron. A single row of "maggots" runs along the outside of the rim, and there are a few impressions just below the shoulder. Bold vertical "stop-ridges"—probably four originally—cross the lowest groove. Partly because of the very coarse fabric, the different rings of which the vessel was built are not ascertainable with certainty. Such evidences as there are suggest a join at each swelling and a two-piece rim (fig. 1 and Pl. L, 1, b).

The second urn is of much better and harder fabric, although as is usual the clay has been mixed with fair-sized grits. The core is black. The outside is mostly buff coloured with patches of light red, the inside grey and dark brown. The forming of a smooth "mechanical slip" on the outside has uncovered numerous grits which are mostly concealed on the more uneven interior. The urn is one of the largest, the diameter of the rim being 15 inches, of the shoulder 16 inches. From the one fragment of base, 1½ inch thick, which is all that remains, the base diameter appears to be 3½ inches, indicating a height of perhaps 18 inches. Clearly the vessel was never meant to stand on its base. The neck takes the form of three grooves. The decoration, extending from the outer edge of the rim to a little below the shoulder, consists of horizontal rows of close-set oblique jabs. Two rows of similar jabs, but vertical, decorate the broad bevel of the mouth. Across each of the two lower grooves there had been seven applied "stop-ridges," those in one row being intermediate between those in the other. Half of the ten of which trace remains have scaled off.

A full diagram of the construction is available, owing to splitting along the lines of building (fig. 1). Below the shoulder there is a join every 1½ inch or so, morticing at the outside. On occasion a slight swelling may be noticed on the inside where the lower part of one strip has been smoothed over the one below. The strip starting below the shoulder was squeezed up and bent inwards to take the thrust of the neck. We may compare the sherd illustrated in *Proc. Soc. Ant. Scot.*, vol. lxxiii. p. 235, fig. 4, 6. A new strip was added for each of the upper two grooves of the neck. The topmost was thinned out and everted to form the rim, and a small strip added outside to give increased thickness and support. A fillet was also laid over the upper surface of the bevelled mouth. The inner edge of this fillet is quite distinct on the inside of the vessel, where there are also surface indications of the two strips below it. The illustrative section shows one of the

ornamental stop-ridges that were added last, before the whole was smoothed over and burnished.

Among the ashes in this urn there were pieces of two burnt flint implements, whitened, pitted, fissured, and partly covered with a calcareous incrustation which obscures the details of secondary flaking. They have been pieced together as far as possible.

The one (fig. 2) is a broad knife or scraper, $2\frac{3}{8}$ inches long, $1\frac{1}{8}$ inch across, with a maximum thickness of $\frac{3}{8}$ inch. It is made on a flake; a pronounced bulb

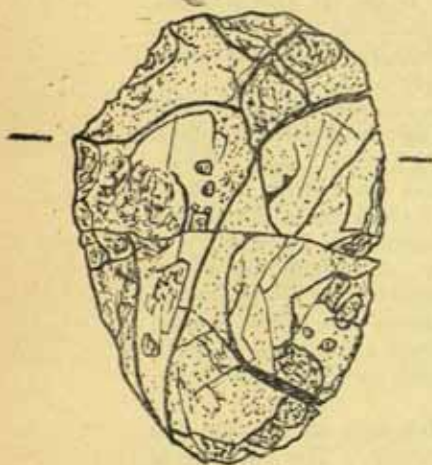


Fig. 2. Flint knife (1/1).

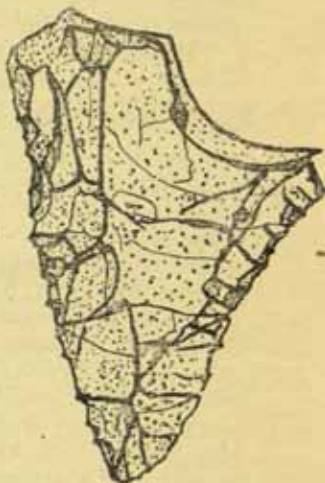
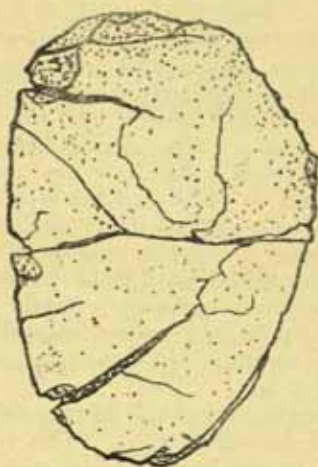


Fig. 3. Flint implement (1/1).

of percussion is to one side of the broader end. The features of the upper surface seem chiefly due to thermal fractures, as is the shape on the dexter side. It may thus have originally been less symmetrical.

The other implement (fig. 3) is also a flake, but the bulbar half is missing. The break is unfortunate, since the tool is carefully worked and of rather a baffling shape. The present maximum length is $2\frac{1}{2}$ inches and thickness $\frac{3}{8}$ inch. Two sides, one straight, the other curving outwards, each with secondary flaking on the upper surface, meet in a point. The straight median ridge is closer to the straight side. I have not been able to find a parallel from which the implement could be reconstructed, or its purpose deduced.

R. B. K. STEVENSON,
Keeper of the Museum.

5. A NICHE-HEAD AT SHERIFFHALL, MIDLOTHIAN.

All that remains of the Jacobean mansion of the Giffords of Sheriffhall is the stair-wing, now put to use as a dovecot.¹ Some 30 yards south-west of the fragment stands a range of farm buildings. In 1934 this range was due for repair. On stripping the walls it was seen that the lower part of the two-storeyed western structure had been an outbuilding roughly contemporary with the mansion; and the byre at the eastern end, while of no great age, proved to have been built partly out of re-used material. Among the stones in secondary use as rubble were two pieces of fifteenth-century ecclesiastical work. One, which has since disappeared, was a section of a moulded cornice enriched with floral *patenae*; the other was the canopy of a niche; both had obviously been removed from a church of some importance.

The niche-head, which now stands upside down in the rose-garden of the modern Sheriffhall (Pl. L, 2), measures 1 foot 10 inches in breadth, 1 foot 3 inches in height, and has a thickness of about 10 inches. The front of the canopy is carved with the usual tabernacle work, while the soffit or ceiling is wrought to represent a tierceron-vault. At the junction of the tierceron- and ridge-ribs are little bosses carved with roses. The junction of the diagonal- and ridge-ribs is covered by a shield of arms with an abbot's staff erected in pale behind it. Although the lower part of the shield has been broken off, so that the principal charge is defective, the arms may be read as: A chevron, on a chief three cushions lozengy with a tassel at each corner. These are not the arms of the Giffords of Sheriffhall, but those of some abbot as yet unidentified.² The fact that the little vaulting bosses on either side of the shield bear roses suggests that this abbot ruled over a Cistercian house, and with Newbattle only a mile and a half away that abbey seems the most likely source for the stones. The nave of the abbey church was rebuilt after its destruction in 1385, and there, as at Melrose, the rebuilding would extend over several generations. Since all that remains of the nave now lies below ground, it may be that these relics are the only evidence we shall ever have for the appearance of that church.

The list of the abbots of Newbattle is by no means complete, and several are known only by their Christian names. Of the latter, Thomas and Andrew flourished respectively at the middle and at the end of the fifteenth century, and if the niche-head came from Newbattle, as here suggested, one or other of the two may be credited with some part of the reconstruction of the nave—the arms are unlikely to be those of Abbot John, on record in 1512, who apparently let the place down.

G. P. H. WATSON, F.R.I.B.A., F.S.A.Scot.

6. EXAMINATION OF THE PREHISTORIC FORT ON CAIRNGRYFE HILL,
NEAR LANARK.

Quarrying operations conducted by the Lanarkshire County Council are destroying the Scheduled Monument labelled "Earthwork" on the O.S. map, but the Ancient Monuments Board stipulated that prior to its removal some scientific examination should be made of the ruins. At their request I undertook the supervision, the County Council supplying the labour, and started a four-weeks' campaign on 12th September 1939. Under war conditions our

¹ *Inventory of Monuments, Midlothian*, No. 194.

² The property had a connection with Dunfermline, but that connection can be ignored.

aim had to be to recover an accurate plan of the monument with the maximum of speed.

Cairngryfe fort dominates the gap that is followed by the modern road from Lanark to Symington, cutting off the great bend of the Clyde. On the O.S. map the monument is indicated by three rings, but the 1856 edition correctly marks the innermost ring "Ree." G. V. Irving, in his article on "Ancient Camps in the Upper Ward of Lanarkshire,"¹ also recognized its recent character. He omits it from his plan, which shows an entrance to the fort on the south and two traverses in the south-west quadrant. Christison² shows in addition two traverses in the south-east quadrant too.

When we arrived in 1939 a large section of the outer rampart on the south-west had also been destroyed, the site of the entrance being thus lost. A stone-and-turf dyke as well as the sheep-ree has been built out of the stones taken from the ancient fortress. The space within the enceinte was covered with green turf interrupted by stones, but the rest of the hill is clad with heather which is encroaching upon the outer ring of the fort. This outer ring appeared as a very low bank, along the crest of which stone protruded through the turf in a belt 6 to 10 feet wide with an overall diameter of 190 feet east to west. The inner ring looked like a belt of large stones on which grass was encroaching along both edges, on the east entirely covering the stones up to the edge of the sheep-ree; elsewhere the belt of exposed stones was 22 to 24 feet wide. It has evidently been quarried into at many points, and on the north stones have been piled up to form two rough cairns. The sheep-ree wall impinges upon it on the east, while outside the latter a triangular trigonometrical station has been built of, and partly upon, the ruins of this wall.

We succeeded in recovering the inner face of the inner ring nearly all round the site, showing that the central fort was an irregular oval with an internal diameter of 66 feet east and west and 73 feet north and south (fig. 1). Spoliation for sheepfold, cairn, and dyke had in most places left only the footings of the wall, the good facing stones having naturally suffered the worst. Disturbance and grass roots had destroyed almost every vestige of the original surface on which the fort's occupants had lived, and no occupation level was recovered. The foundations of the wall consist for the most part of blocks of the local trap rock, 1 to 1½ foot long and 9 to 15 inches high, but in places large boulders of conglomerate, 1½ to 2½ feet in length, had been collected to replace the inferior volcanic stone. On the south-west, long flat slabs of sandstone or conglomerate, measuring up to 2 feet 5 inches × 1 foot 4 inches × 1 foot 4 inches or 3 feet 4 inches × 7 inches × 1 foot 8 inches, were regularly employed for the second course. On the north-east, where the wall rests low down on rock sloping northward, three to five courses were discovered still standing more or less intact as much as 3 feet high. Here the upper courses consist of relatively small blocks (Pl. LI, 2).

In the solid rock that slopes under the face here a series of rather irregular holes had been quarried at intervals of just under 2 feet 8 inches some 12 inches from the wall base. One, 1 foot in diameter, was marked by a black stain of carbonized wood at ground level, the dirty loose soil continuing down to a depth of 8 inches. The rest were recognized only in the rock and were full just of dirty earth (Pl. LI, 2). As there was as a rule no undisturbed soil overlying rockhead, and as grass and heather roots penetrating the incipient fissures disintegrate the rock so that even a brush will manufacture a hole, post-holes were

¹ *Arch. J.*, 1855, 1-53.

² *Proc. Soc. Ant. Scot.*, vol. xxiv. p. 325.

not easily discernible elsewhere. But in the south-west quadrant a segment of face, over six feet long, runs over (without directly resting on) a flat surface of quite solid rock. In this it was certain no post-holes had been quarried. Hence the posts attested in the north-west quadrant were presumably added simply to

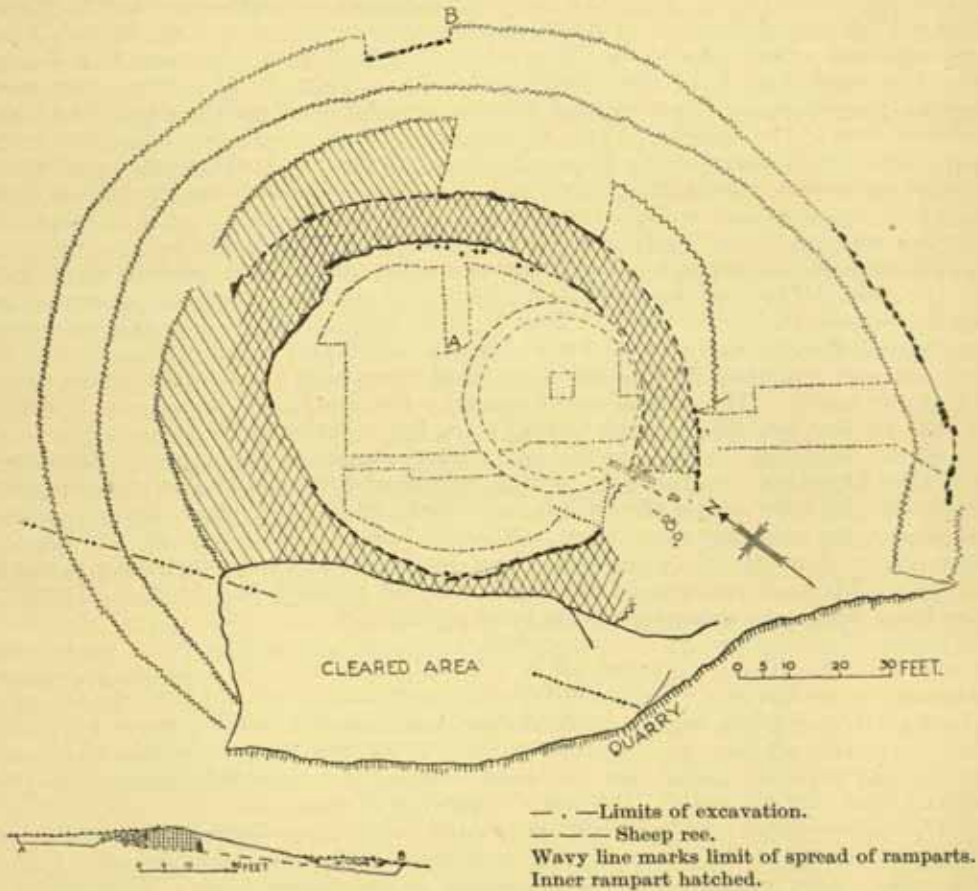


Fig. 1. Plan of fort and section along AB.

provide extra stays where the foundations rested on a steep slope instead of as usual on level ground.

The disparities in the masonry above-mentioned are not the only indications that the rampart's inner face was constructed in pieces by distinct gangs. On the north two segments join up; evidently the line had not been laid out accurately since the footings on the west terminate over a foot in front of those on the east. Indeed the discrepancy was so glaring that we sought—in vain—a continuation of the northern face behind the southern. In reality there are no footing stones behind those shown.

The outer face was generally in worse plight than the inner, even the footings having slipped in many places, and the upper courses having generally fallen

The object shown in Pl. LII, 4 is $3\frac{1}{16}$ inches (7.5 cm.) long and cast in bronze. But at the end shown uppermost in the photograph the bronze encases an iron core just over $\frac{3}{16}$ inch (0.5 cm.) thick, which presumably once extended beyond the casing, though the exposed portion has been completely rusted away. The

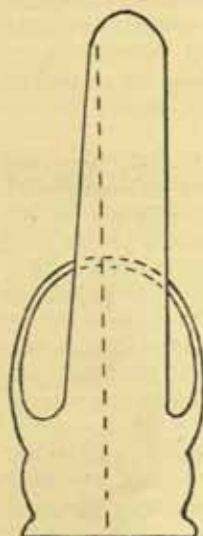


Fig. 2. Profile of terret (1/1).

opposite end terminates in a flat disc, $1\frac{1}{8}$ inch (4.6 cm.) in diameter, and does not seem to have been intended as a base, as the illustration might suggest. Its edge is rounded, and on the bevel a groove has been engraved which cannot be traced right round it. The surface of the disc is rough with two blister-like excrescences in one quadrant. These show up pale against the dark patina and suggest blobs of solder. The end was apparently covered by a disc of bronze, less than 0.1 cm. thick and about $1\frac{1}{8}$ inch (4.3 cm.) in diameter—its edges are worn—that was found detached from the casting. Conceivably a plate of enamel or some perishable material with an ornamental edge had originally been interposed between the loose disc and the end of the casting.

Though I have shown the photograph to leading experts in Roman and Celtic archaeology, no close parallel has been adduced. The most plausible suggestion as to the object's function, made by Mr C. F. C. Hawkes, F.S.A., is that it was the ornamental terminal of a chariot's lynch-pin. The thinness of the surviving end of the iron core, that would constitute the pin proper, may militate against this hypothesis. On the other hand, it would bring it into connexion with the terret as part of a chariot's gear. If Hawkes's suggestion be accepted, our specimen would be a derivative of the Yorkshire type as defined by Professor Ward Perkins in

Antiquaries Journal, xx. (1940), pp. 358-367, as might be expected in view of the familiar connexions with the Arras culture observable in horse-trappings from the Scottish Lowlands (Childe, *Prehistory of Scotland*, p. 230).

Finally, the object shown as Pl. LII, 2 is made of lead, 0.2 cm. thick, the edges being much damaged.

V. G. CHILDE.

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1940-41.*Donations.*

(1) Circular Sugar Bowl of silver, Edinburgh, 1793. On the foot is the maker's initials "F. H." (Fraser Howden), the town-mark (a castle), the thistle, the date letter N, and the King's head. Presented by THOMAS YULE, W.S., F.S.A.Scot.

(2) Early seventeenth century slipped-in-the-stalk silver Spoon, found at Kirkhope Tower, Selkirkshire, about 1825. Three-pronged silver-handled Fork, eighteenth century, found behind the wood panelling of Fortissot House, Shotts, Lanarkshire. Presented by Mrs MACMILLAN, through Mrs ALLISON, 3 Peel Terrace, Edinburgh.

(3) Forty-nine Communion Tokens. Presented by A. J. KINLOCH PAUL, Johannesburg, South Africa.

(4) Perforated Axe-hammer of granite, measuring 11 inches by $4\frac{3}{8}$ inches by $2\frac{7}{8}$ inches, from East Lothian. Presented by THOMAS C. KELLY, Whitehouse Road, Barnton, Edinburgh.

(5) Portions of Cinerary Urns and Flint Implements found on the estate of Balnamoon, Balrownie, Brechin, Angus. Presented by Lt.-Colonel W. B. CARNEGIE-ARBUTHNOTT, F.S.A.Scot. (See Note No. 4, p. 209.)

(6) Four Communion Tokens. Presented by Miss L. MACDONALD, Ballintuim House, Blairgowrie.

(7) Relics from the enclosure called "Christison No. 10," Manor, Peeblesshire. Presented by JAMES STEWART, Castlehill, Manor. (See Communication by R. B. K. Stevenson, M.A., p. 92).

(8) Spindle-whorl of white sandstone, measuring $1\frac{3}{4}$ inch in diameter and $\frac{3}{4}$ inch in thickness, from a hut circle in Glenrath. Presented by Mrs ST CLAIR CUNNINGHAM, Hallmanor.

(9) Relics from a Fort at Braidwood, near Penicuik, Midlothian. Presented by Mrs WARDEN, Braidwood. (See Communication by R. B. K. Stevenson in subsequent volume.)

(10) Brass Stamp with legend "KIRKWALL DUTY PAID ON FOREIGN STAINED PAPER," surmounted by Royal cipher and crown. Presented by JOHN FRASER, Corresponding Member.

(11) Cup of schist (broken), round with flat bottom, found near Park Cottage, Bridge of Lochay, Killin, Perthshire. Presented by A. D. D. HENDERSON, 2 Grosvenor Gardens, Edinburgh.

(12) Food-vessel Urn of clay, with beaker affinities, found in a cist at Skateraw, East Lothian. Presented by D. L. BOWE, Skateraw. (See Note No. 8, vol. lxxiv. p. 141.)

(13) Flat Spindle Whorl of grey sandstone, found near Giant's Stones, Eskdalemuir, Dumfriesshire. Presented by Dr L. INGLIS JOHNSON, 8 Portland Square, Carlisle.

(14) Polished Axe of dark grey stone, found at Chapelton, near Kirriemuir, Angus. Presented by The Rt. Hon. LORD LYELL of Kinnordy.

(15) Relics from the excavation of a "Wag" and its associated dwelling, near Forse, Caithness. Presented by Captain W. BAIRD of Forse, through ALEXANDER O. CURLE, C.V.O., LL.D., F.S.A.Scot. (See Communication by Dr Curle, p. 23.)

(16) Oval Medal of silver, inscribed on one side "Given by the Highland Society of Scotland to James Gray, 1824," and on the other side the figure of a plough. Presented by JOHN LAWSON, S.S.C., 64 Frederick Street, Edinburgh.

(17) Two fragments of the wall of a Food-vessel Urn, found in the Stone Circle near Marchwell, Glencorse, Midlothian. Presented by R. B. K. STEVENSON, M.A., F.S.A.Scot., Keeper of the Museum.

(18) Relics from the excavation of a Fort at Kaimes Hill, Midlothian. Presented by DALMAHOY ESTATES LTD. (See Communication by Professor V. G. Childe, p. 43.)

ACQUIRED THROUGH THE KING'S AND LORD TREASURER'S REMEMBRANCER.

Personal Seal Matrix of silver, bearing a crest consisting of a lion séjeant with a tree at each side, growing out of a mount. Below is the letter W, the whole being surrounded by a border decorated with small saltires. Date probably fifteenth century. Found at Newbattle Abbey.

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Donations.

(1) Thomas Newbigging, D.Sc., and his Literary Work. By L. M. Angus-Butterworth, M.I.Mech.E., F.S.A.Scot. Reprint from *Transactions of the Rochdale Literary and Scientific Society*. Vol. xx. Presented by THE AUTHOR.

(2) Manifold Unity. The Ancient World's Perception of the Divine Pattern of Harmony and Compassion. By Miss V. C. C. Collum, F.S.A.Scot. London, 1940. Presented by THE AUTHORESS.

(3) Extracts from the Records of the Burgh of Edinburgh, 1665. Edited by Marguerite Wood. Edinburgh, 1940. Presented by the CORPORATION OF THE CITY OF EDINBURGH.

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(4) Proceedings of the British Academy. Vols. i.-xxiv. with Index to Vols. i.-xx.

Paulys Real-Encyclopädie der Classischen Altertumswissenschaft.

Denkmäler des Klassischen-Altertums. (3 vols.)

Haverfield Papers. Miscellaneous. (3 vols.)

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Account of some remarkable Ancient Ruins lately discovered in the Highlands and Northern Parts of Scotland by John Williams. Edinburgh, 1777.

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Edgar's History of Dumfries, 1746. Edited by R. C. Reid. Dumfries, 1915.

The Aqueducts of Ancient Rome. By Thomas Ashby. Oxford, 1935.

The Roman Revolution. By Ronald Syme. Oxford, 1939.

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Die Rangordnung des Römischen Heeres. By A. von Domaszewski. Bonn, 1908.

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Royal Commission on the Ancient and Historical Monuments of Scotland. Second Report: The County of Sutherland. Third Report: The County of Caithness. Fourth Report: Galloway, Vol. i.—County of Wigtown. Sixth Report: County of Berwick.

Die Westpfälzischen Sigillata-Töpfereien von Blickweiler und Eschweiler Hof. By R. Knorr and Fr. Sprater. Speier am Rhein, 1927.

Notes not included in the Memoirs already published on the Roman Roads in Northumberland. By Henry Maclauchlan, F.G.S. London.

The Roman Fort at Piercebridge, County Durham. By Edward Wooler, F.S.A. Frome, 1917.

Roman Mines in Europe. By Oliver Davies. Oxford, 1935.

The Roman Fort near Brecon. By R. E. Mortimer Wheeler, M.C., D.Litt., F.S.A. London, 1936.

Victoria County Histories. Romano-British Remains in: Somerset, Hampshire, Shropshire, Bedford and Herts, Worcestershire, Derbyshire, Northamptonshire, Kent, Cornwall and Huntingdon, Berkshire and Surrey, Norfolk, Warwickshire.

Deutsches Archäologisches Institut Römisch-Germanische Kommission, Frankfurt A/M. Römische Grabmäler von Neumagen. By Wilhelm von Massow. Textband and Plates. Berlin, 1932.

Medallie Illustrations of the History of Great Britain and Ireland. Indexes, General Title, and Preface. Plates I.-CLXXXIII. London, 1911.

Bequeathed by the late Sir GEORGE MACDONALD, K.C.B., M.A., LL.D., D.Litt., F.B.A., H.R.S.A.

(5) Scottish Heraldic Seals, Royal, Official, Ecclesiastical, Collegiate, Burghal, Personal. By John Horn Stevenson, K.C., and Marguerite Wood. In three volumes. Privately printed. Glasgow, 1940. Presented by the late THOMAS YULE, F.S.A.Scot.

(6) A History of the Clan MacCrimmon. Part ii. Compiled by G. C. B. Poulter, F.S.A.Scot. Presented by THE COMPILER.

(7) Aspects of Intentional Fracture. By A. D. Lacaille, F.S.A.Scot. Reprinted from the *Transactions of the Glasgow Archaeological Society*. Vol. ix. Presented by THE AUTHOR.

(8) Corporation of Glasgow Art Galleries and Museums. Scott Collection of Arms and Armour. Introductory Guide.

Rosenborg Castle. A Guide to the Chronological Collections of the Danish Kings, 1938. Copenhagen, 1938.

Guides to the National Museum, Copenhagen. The Danish Collections of Antiquity. Copenhagen, 1938.

Nationalmuseets Vejledninger. De Danske Samlinger. Middelalder og nyere Tid til 1750. Copenhagen, 1938.

Presented by A. J. H. EDWARDS, F.S.A.Scot., Director of the National Museum of Antiquities of Scotland.

(9) Society of Friends of Dunblane Cathedral, 1940. Vol. iii. Part iii. Presented by THE SOCIETY.

(10) Hull Museum Publications, Nos. 207-209, 211. Early Tramecars and Records of Additions. Presented by THOMAS SHEPPARD.

(11) Map of the Forth, Clyde, and Tay, Roman Period. Published by H.M. Ordnance Survey, Southampton. Presented by O. G. S. CRAWFORD, F.S.A., *Hon.* F.S.A.Scot.

(12) The Roman Legionary Fortress at Caerleon in Monmouthshire. Report on the Excavations carried out in Myrtle Cottage Orchard in 1939. By Aileen Fox, M.A. Presented by THE DIRECTOR, National Museum of Wales.

(13) The History of the Stuarts, Earls of Traquair, Barons Linton and Cabarston, and Charles Edward Traquair Stuart-Linton. By L. G. Pine, B.A., F.S.A.Scot. Presented by C. STUART-LINTON, 66 East 56th Street, New York City.

(14) Nicola Pisano and the Revival of Sculpture in Italy. By G. H. and E. R. Crichton. Cambridge, 1938. Presented by G. H. CRICHTON.

(15) Greek Medicine. Reprinted from *The Medical Press and Circular*, Vol. cciv. No. 5285, August 1940. The History of Otology. Reprinted from *The Journal of Laryngology and Otology*, Vol. lv. No. 11, November 1940. By Douglas Guthrie, M.D., F.R.C.S., F.S.A.Scot. Presented by THE AUTHOR.

(16) Gaelic Medicine. By Seòladair. Reprinted from the *Broad-way*. Vol. No. 8-5, Oct.-Dec. 1941. Presented by IAIN M. MACLEAN, F.S.A.Scot.

(17) The British Compendium or Rudiments of Honour. Fourth Edition. Vol. iii. Presented by Mrs C. BLAZE, 25 Hugh Street, Eccleston Square, London.

(18) Harvard Archaeological Expedition in Ireland. By H. O'Neill Hencken, M.A., Ph.D., D.Litt., F.S.A.Scot., F.S.A., M.R.I.A. Reprinted from *The American Journal of Archaeology*. Vol. xlv. (1941), No. 1. Presented by THE AUTHOR.

(19) A Bronze Age Cemetery at Springhill Farm, Baillieston, near Glasgow. By J. Harrison Maxwell, M.A., F.S.A.Scot. Reprinted from *Transactions of the Glasgow Archaeological Society*. Vol. ix. Part 4. Presented by THE AUTHOR.

(20) The Journal of the Manx Museum. Vol. v. No. 64. Presented by THE CURATOR.

(21) The Church in Orkney. Records by A. W. Johnston, F.S.A.Scot. Presented by THE AUTHOR.

Purchases.

Scots Year Book, 1940-41.

Prehistoric Communities of the British Isles. By V. Gordon Childe. Edinburgh, 1940.

The Gallovidian Annual, 1941.

Prehistoric England. By Grahame Clark, F.S.A. London, 1940.

Essays and Studies presented to Professor Eoin MacNeill, D.Litt., on the occasion of his Seventieth Birthday, May 15th, 1938. Dublin, 1940.

MEETINGS OF THE SOCIETY.

MEETINGS OF THE SOCIETY.

Saturday, 25th January 1941, WILLIAM ANGUS in the Chair.

A Ballot having been taken, the following were elected Fellows: William Elder Levie; John Terry-Lloyd; Miss Anne S. Robertson, M.A.

A Donation to the Museum was intimated, as per list on p. 219.

The following Communications were read:—

- I. Excavation of a "Wag" at Forse, Caithness, by ALEXANDER O. CURLE, LL.D., F.S.A.Scot., F.S.A. (*printed*, pp. 23-38).
- II. The Water Supply of the Roman Fort at Lyne, by IAN A. RICHMOND, M.A., F.S.A.Scot., F.S.A. (*printed*, pp. 39-42).
- III. The Defences of Kaimes Hill Fort, Midlothian, by Professor V. G. CHILDE, D.Litt., D.Sc., F.B.A., F.S.A.Scot., F.S.A. (*printed*, pp. 43-54).

Saturday, 22nd February 1941, ALEXANDER O. CURLE, C.V.O., LL.D., Vice-President, in the Chair.

A Ballot having been taken, the following were elected Fellows: Samuel Gemmell, Examiner R.N.T.F.; Captain Robert Greenhill Black, late I.A.

Donations to the Museum were intimated, as per list on pp. 219-220, and thanks voted to the donors.

The following Communications were read:—

- I. The Campbeltown Raised Beach and its contained Stone Industry, by W. J. MCCALLIEN, D.Sc., F.R.S.E., and A. D. LACAILE, F.S.A.Scot. (*printed*, pp. 55-91).
- II. Medieval Dwelling Sites and a Primitive Village in the Parish of Manor, Peeblesshire, by R. B. K. STEVENSON, F.S.A.Scot., Keeper of the Museum (*printed*, pp. 92-114).
- III. The Red Castle of Lunan Bay, by W. DOUGLAS SIMPSON, M.A., D.Litt., F.S.A.Scot. (*printed*, pp. 115-121).

Saturday, 29th March 1941, ALEXANDER O. CURLE, C.V.O., LL.D., Vice-President, in the Chair.

A Ballot having been taken, the following were elected Fellows: The Rev. William White Anderson, M.C., M.A.; A. H. A. Hogg; A. W. G. Lowther, F.S.A., A.R.I.B.A., 2nd Lieut. R.A.S.C.; John MacBean.

Donations to the Library, as per list on pp. 220-223, were intimated and thanks voted to the donors.

Purchases for the Library, as per list on p. 223, were intimated.

The following Communications were read:—

- I. Some Objects recently discovered at Brackmont Mill, near Leuchars, Fife, and a Copper Halberd found in Fife, by Professor DAVID WATERSTON, M.A., M.D., F.R.C.S.E., F.S.A.Scot. (*printed*, pp. 205-208).
- II. Note on an Old Coal-Working and a Wooden Shovel from Ormiston, East Lothian, by KENNETH M. WHITE, M.Inst.M.E. (*printed*, pp. 122-126).
- III. Mural Decorations in Two Rooms at the House of Kinneil, Bo'ness, Linlithgowshire, made at the instance of James, Second Earl of Arran, Protector and Regent of Scotland, and of Anna Cunningham, wife of James, Second Marquess of Hamilton, by JAMES S. RICHARDSON, F.S.A.Scot., Inspector of Ancient Monuments for Scotland (*printed*, pp. 184-204).

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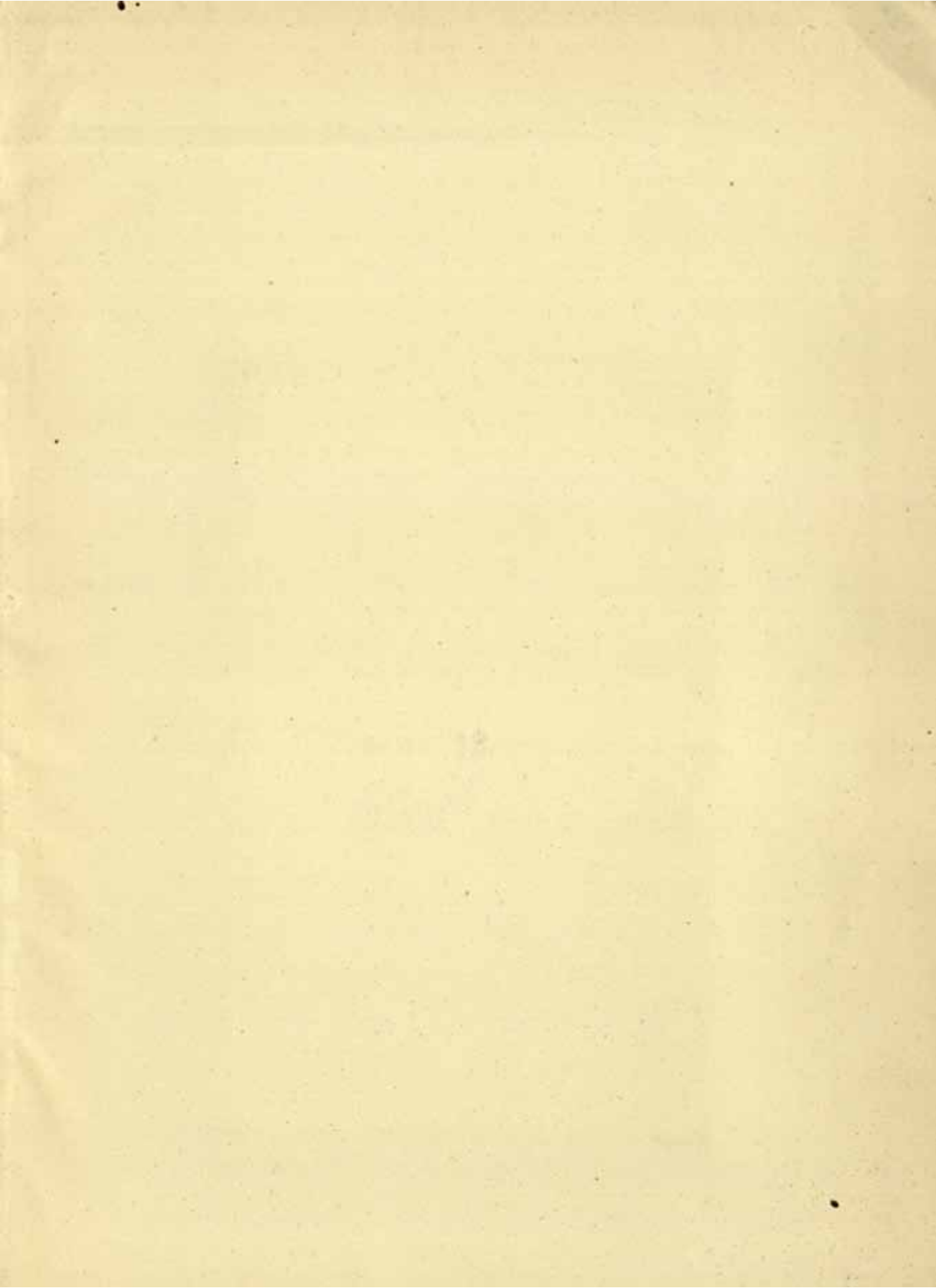
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